A Short, New, and Easy

METHOD

Of Working the

Rule of Practice

IN

ARITHMETICK.

WITH

Great Variety of Curious, and Uncommon CONTRACTIONS, for the greater Facilitating of all Operations in TRADE.

Very Neceſſary for all Merchants, and Tradeſmen.

In TWO PARTS.

By *W. Hodgkin*, Writing-Maſter.

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MVSEVM
BRITAN
NICVM

TO

Mr. *John Smith.*

MVSEVM
BRITAN
NICVM

SIR,

THE firſt Hints of the following Sheets being a Debt I owe to your ſelf, the Addreſſing of them to you is the leaſt Thing I can do to diſcharge it. I am under many other Obligations to you, which not being able to return, 'tis ſome Pleaſure to me, that I have an Op-

 portunity

portunity to make you this publick Acknowledgment; and to assure you that I am,

SIR,

Your Most Obliged,

And Most Obedient Servant,

WILLIAM HODGKIN.

THE

PREFACE.

TO recommend, at this Time of Day, the Uſefulneſs of Arithmetick to the World, is needleſs: For almoſt every one ſufficiently knows its excellent Uſes in all the trading Provinces of Life, and takes care to acquire ſomething of ſo neceſſary an Accompliſhment. And as Diſpatch is the Life of Buſineſs, every Attempt to promote that, by facilitating numerical Operations, muſt needs be favour'd by the trading World.

This is the Deſign of the following Eſſay; of which I ſhall give the Reader a little prefatory Account.

In the firſt ſix Caſes (which may be abridg'd to four) the Method of working is ſo ſhort and eaſy to the Memory, that 'twill quickly be maſter'd.

In the ſeventh Caſe, I have given you almoſt the whole Buſineſs of Practice, perform'd by Multiplication, with but very little dividing, in which I have endeavoured to render Monſieur Monier's *Method of Multiplication in his Univerſal*

Practice

Practice of Mercantile Arithmetick, more easy and intelligible to young Learners.

In the eighth Case, I have laid down a Method for working such Quantities as have odd Weight or Measure annex'd, with all possible Exactness; a Matter by others either wholly omitted, or work'd in such a Manner, as to want a Penny more or less, when the same is prov'd by the Rule of Three: Some to remedy this Difficulty have recourse to the Doctrine of Vulgar or Decimal Fractions, but here it is done in the same Manner, as you manage odd Shillings, Pence, and Farthings.

The first Part concludes with several easy, exact, and expeditious Rules for reckoning in many Cases by the Head.

In the second Part, by way of proving the first, I have made some useful Remarks, particularly that when the Price is odd Shillings, from 3 to 25, to give the Answer in Pounds, in one Line; also a particular Way of managing those Quantities which have odd Weight or Measure annex'd, according to the Method of Mr. John Speidell, *at the End of his Arithmetical Extraction; but here explain'd, with other Observations; in all which, a Lover of Accompts, will, I hope meet with no small Satisfaction. I submit the whole to the proper Judges of these Matters; and hope the Goodness of the Design will be allowed a Balance for all the Imperfections in the Execution.*

THE

THE INTRODUCTION.

THE Rule of *Practice* in Arithmetick is the moſt compendious Method of Working the *Rule of Three*, and is generally the conciſeſt Manner of Reducing any Sum of Money of what Name or Denomination ſoever into Pounds, Shillings, Pence and Farthings. For the Quantity of Goods, the Price of which is required, is to be conſidered as a Sum of Money of the ſame Denomination with the Price of the Ell, Yard, Cwt. *&c.* which Sum, in moſt Methods of *Practice* is immediately converted into other Money by Suppoſition, to the End the Operation may be more expeditious; and then the Queſtion is worked accordingly. Therefore, in many of the Examples following, the Quantity of Goods is immediately chang'd into ſuppoſed

Pieces of Two Shillings, or Tenths of a Pound, by ſuppoſing the Price to be at Two Shillings *per* Yard, *per* Ell, *per* Cwt. *&c.*

For EXAMPLE.

Suppoſe the Price of 1689 Yards at 8 Pence *per* Yard was required;

It's evident that theſe 1689 Yards will really coſt 1689 Eight Pences; which to reduce into Pounds, Shillings, *&c.* may be perform'd by ſuppoſing the Price to be Two Shillings. Then, becauſe Eight Pence, in this Example, is the third Part of Two Shillings, divide the Quantity given by Three, it produces 563 Two-Shilling Pieces for the Anſwer, which, by Inſpection, will ſhew how many Pounds, Shillings, *&c.* as in the following Examples.

CASE

CASE I.

THE Price of one Yard, Ell, Cwt. *&c.* being 2*s.* or 4*s.* or 6*s.* or any even Number of Shillings to 24*s.* To find the Price of any large Quantity of the Same.

RULE.

Multiply the given Quantity by half the Price, and divide the Product by 10 (which is done by cutting off the Figure in the Unit's Place, or by Inſpection) the Quotient is Pounds: And if there be any Remainder, it is ſo many Two-Shilling Pieces; which multiply by 2 for Shillings.

EXAMPLE 1.

At 2 Shillings *per* Book, What comes 2851 Books to?

1|0)285|1(
2 Anſwer *L.* 285---2*s.*

S. 2

In the preceding Example half the Price being 1, and the Quantity given, multiplied thereby producing the ſame, there remains to divide by 10, and double the Unit's Figure, which are done by the Rule aforegoing, or by Inſpection.

EXAMPLE. 2.

What comes 1786 Yards to, at 4*s. per* Yard?

To anſwer which, Firſt, ſuppoſe the Price to be 2 Shillings. This conſequently changes the Goods into Pieces of Two Shillings: Then multiply and divide according to the Rule aforegoing, it gives the Anſwer. As follows,

If the Price was 2s. | 1786 Yds. would coſt 1786 [2*s.* Ps.
2

Anſwer *L.* 357 | 2
2

S. 4

Obſervation. In the following Examples, for the Sake of Brevity (as is very common in Schools) I ſhall frequently leave out Part of the Words of the Queſtion ſuch as *What comes*, and the Words, *per* Yard, *per* Cwt. *&c.* Alſo inſtead of writing the imaginary Price in Words at length againſt the Quantity given, *viz.* If the Price was 2*s.* write only, if 2*s.* as in the two following Queſtions.

EXAMPLE 3.

At 6*s. per* Ell, What comes 1947 Ells to?

If 2*s.* | 1947 Ells muſt coſt as many 2*s.* Ps. un-
3 [derſtand the like of the reſt.

Anſ. *L.* 584 | 1
2

S. 2

Ex-

EXAMPLE 4.

What comes 2799 Barrels to, at 8*s.* *per* Barrel?

If 2*s.* | 2799
4

Anſwer *L.* 1119 | 6
2

S. 12

EXAMPLE 5.

983 Reams at 10*s.*
5

Anſwer *L.* 491 | 5
2

S. 10

EXAMPLE 6.

3856 Quarters at 12*s.*
6

Anſwer *L.* 2313 | 6
2

S. 12

Ex-

EXAMPLE 7.

951 Sheep at 14*s*.

7

Anſwer *L*. 665 | 7
2

S. 14

EXAMPLE 8.

6756 Dozens at 16*s*.

8

Anſwer *L*. 5404 | 8
2

S. 16

EXAMPLE 9.

671 Thouſands at 18*s*.

9

Anſwer *L*. 603 | 9
2

S. 18

Ex-

EXAMPLE 10.

384 Chaldron of Coals at
11 [22 *s.*

Anſwer *L.* 422 | 4
2

S. 8

EXAMPLE 11.

879 Cwt. at 24 *s.*
12

Anſwer *L.* 1054 | 8
2

S. 16

For the better underſtanding of the foregoing Examples, take the Operation of this laſt Example as follows.

Firſt, The 879 Cwt. are immediately chang'd into 879 Two-Shilling Pieces, by ſuppoſing the Price to be at 2 *s. per* Cwt. as is done in Example the third; but the Price here being 24 *s.* that is 12 times 2 *s.* conſequently the Goods muſt coſt 12 times 879 Two-Shilling Pieces; therefore multiply by 12, ſaying 12 times 9 is 108; ſet down 8 and carry 10; then ſay 12 times 7 is 84, and 10 is 94; ſet down 4 carry 9; laſtly 12 times 8 is 96 and 9 is 105, which ſet down, becauſe you have no more Figures to multiply, the

the whole Product is 10548 Two-Shilling Pieces, which dividing by 10. and doubling the Unit's Figure make *L.* 1054---16*s.*

More EXAMPLES for EXERCISE.

At 2*s.* or 4*s.* or 6*s.* or any other even Number of Shillings to 24*s.* What is the Price of 7893 Yards?

See the Queſtions of this Caſe, worked with a little Diverſity in Caſe I. of Part II.

CASE II.

THE Price of one Yard, Ell, *&c.* being odd Shillings, *viz.* 3*s.* or 5*s.* or 7*s.*, *&c.* to 25*s.* to find the Price of any large Quantity of the Same.

RULE.

Multiply the given Quantity for the even Shillings, as in the laſt Caſe, and for the odd Shilling that is left, divide the given Quantity by 2 (that is halve it) and if one remains, ſet it down; it will be a Shilling; then add theſe two Sums of Money together, and cut off the Figure in the Unit's Place, it gives the Anſwer in Pounds. *Laſtly*, multiply the Figure cut off, by two as before, taking in one (if

(if there be a Remainder) it makes the odd Shillings. As for Example,

EXAMPLE 1.

What muſt be given for 6426 Buſhels at 3*s.*?

For 2*s.* 6426 Buſhels will coſt as many 2*s.* Ps.

1 ½ 3213

Anſwer *L.* 963 | 9
2

S. 18

EXAMPLE. 2.

4886 Hundred Weight at 5*s.*

2

9772

1 ½ 2443

Anſwer *L.* 1221 | 5.
2

S. 10

This laſt Example is worked a ſhorter Way at the End of this Caſe.

When you halve the given Price, place it all as a Multiplier, and not ſet the odd Shilling towards the Left Hand, as in the two former Examples.

EXAMPLE 3.

793 Reams at 7 *s.*

3 ½

2379

396 ½

Answer *L.* 277 | 5 ½

2

S. 11

EXAMPLE 4.

876 Kilderkins at 9 *s.*

4 ½

3504

438

Answer *L.* 394 | 2

2

S. 4

EXAMPLE 5.

1397 Yards of Broad Cloth at 11 *s.*

5 ½

6985

698 ½

Answer *L.* 768 | 3 ½

2

S. 7

Ex-

EXAMPLE 6.

2873 Quarters of Corn at 13*s.*

$\frac{1}{2}$ 6 $\frac{1}{2}$

17238
1436-1

Anſwer *L.* 1867 | 4-1
2

S. 9

EXAMPLE 7.

789 Pieces of Linnen at 15*s.*

7 $\frac{1}{2}$

5523
394-1

Anſwer *L.* 591 | 7-1
2

S. 15

EXAMPLE 8.

7197 Quarters of Corn at [17*s.*

8 $\frac{1}{2}$

57576
3598 $\frac{1}{2}$

Anſwer *L.* 6117 | 4 $\frac{1}{2}$
2

S. 9

EXAMPLE 9.

3011 Bags at 19 *s.*

9 ½

27099
1505 ½

Answer *L.* 2860 | 4 ½
2

S. 9

EXAMPLE 10.

7756 Guineas at 21 *s.*

10 ½

77560
3878

Answer *L.* 8143 | 8
2

S. 16

EXAMPLE 11.

7857 Chald. of Coals at 23 *s.*

11 ½

86427
3928-1

Answer *L.* 9035 | 5-1
2

S. 11

Ex-

EXAMPLE 12.

1678 Broad Pieces of Gold [at 25*s.*

12 ½

20136
839

Anſwer *L.* 2097 | 5
2

S. 10

EXAMPLES for EXERCISE.

What is the Price of 3579 Cwt. at all the odd Shillings, *viz.* 3*s.* 5*s.* &c. to 25 Shillings?

See all the preceding Examples of this Caſe performed at one Operation in Caſe 2. of Part 2.

A Table of the even (or aliquot) Parts of a Pound, which admit of as ſhort, but five, *viz.* 6*s.* 8*d*; 5*s*; 3*s.* 4*d*; 2*s.* 6*d*; and 1*s.* 8*d*; of a ſhorter Operation than by the Principle of Two Shillings.

The Price being	*s.*	*d.*	Take	That is, divide the Quantity given by	The Quotient is the Anſwer in *L. s. d.*
	10	0	½	2	
	6	8	⅓	3	
	5	0	¼	4	
	3	4	⅙	6	
	2	6	⅛	8	
	2	0	1/10	10	
	1	8	1/12	12	
	1	0	1/20	20	

Note;

Note, If there be a Remainder, after Diviſion, value it thus.

RULE.

Multiply the given Price by the Remainder, either in your Mind, or in a Place apart; it gives you the odd Shillings and Pence.

Or thus. Reckon it a Pound or Pounds, which reduce into Shillings, multiplying by 20, either in your Mind, or in a Place apart; then continue on the Diviſion, the Quotient is Shillings to be ſet in the Place of Shillings; if any Thing ſtill remains, it is a Shilling or Shillings; which turn into Pence, multiplying by 12; then divide again; the Quotient is Pence, to be ſet in the Place of Pence.

When the Price of the Unit is any one of theſe five even, or aliquot Parts of a Pound, *viz.* 6*s.* 8*d.* or 5*s.* or 3*s.* 4*d.* or 2*s.* 6*d.* or 1*s.* 8*d.* you may work your Queſtion a ſhorter Way, than by the Principle aforeſaid; and ſo conſequently, the Goods are immediately converted into Pounds, by ſuppoſing the Price to be at 1 *L. per* Yard, *per* Cwt. *&c.* Examples of all which follow.

EXAMPLE 1.

What is the Price of 7892 Gallons at 6*s.* 8*d.* *per* Gallon?

If

If the Price was 1 *L.* 7892 Gallons muſt needs
[coſt 7892 *L.*
6*s.* 8 *d.* is $\frac{1}{3}$ *L.* 2630--13*s.*--4*d.* Anſwer.

EXAMPLE 2.

5*s.* is $\frac{1}{4}$ 4886 Cwt. at 5*s.*

L. 1221--10*s.* Anſwer as in Ex.
[2. Caſe II.

EXAMPLE 3.

3*s.* 4*d.* is $\frac{1}{6}$ 958 Hats at 3*s.*---4*d.*

L. 159--13*s.*--4*d.* Anſwer.

EXAMPLE 4.

2*s.* 6*d.* is $\frac{1}{8}$ 172 Days work at 2*s.*--6*d.*

L. 21--10*s.* Anſwer.

EXAMPLE 5.

1*s.* 8*d.* $\frac{1}{12}$ 38794 Ells at 1*s.*--8*d.*

L. 3232--16--8*d.* Anſwer.

To explain theſe five Examples, take the laſt as follows;

Firſt,

First, The 38794 Ells are immediately chang'd into Pounds, by ſuppoſing the Price to be at 1 *L. per* Ell, as is done in the firſt Example of theſe five. In this the Price being but one twelfth Part of a *L*, conſequently the Goods will coſt but one twelfth of 38794 *L*. Therefore divide by 12, ſaying the Twelves in 38 three times, ſet down 3, and put the 2 that is over to the next Figure; it makes 27; then, the Twelves in 27 are twice; ſet down 2, and put the 3 that is over to 9; it makes 39; then, the Twelves in 39 are 3 times, ſet down 3, and put the 3 that is over to 4; it makes 34; the Twelves in 34 are 2 times, which ſet down, and there remains ten, which are ten One and Eight-Pences. Therefore according to the Rule multiply 1*s*. 8*d*. by 10, ſaying 10 times 8 Pence is 80, that is 6 Shillings and 8 Pence; ſet down 8 in the Place of Pence and carry 6. *Laſtly*, 10 times 1 is 10, and 6 is 16 Shillings, to be ſet down. Thus the Amount of 38794 Ells at 1*s*. 8*d*. *per* Ell, is *L*. 3232--16*s*.--8*d*.

EXAMPLES for EXERCISE.

What comes 1997 Hats to, at 6*s*. 8*d*. or 5*s*. or 3*s*. 4*d*. or 2*s*. 6*d*. or 1*s*. 8*d*. *per* Hat?

CASE

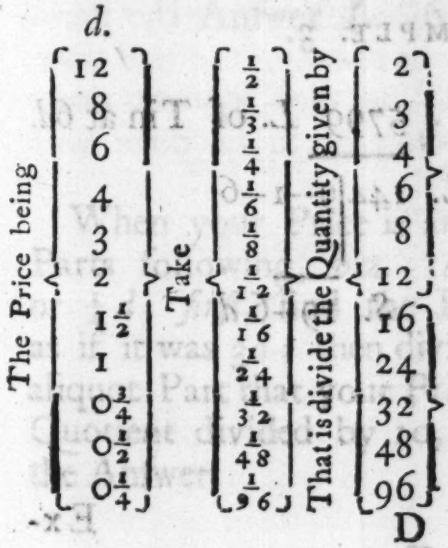
CASE III.

THE Price of one Yard, Ell, *&c.* being an aliquot Part of 2 Shillings.

RULE.

Divide the Quantity given by the ſaid even or aliquot Part, or by the Numbers in the following Table; if any thing remains, it will be leſs than two Shillings; for which ſet down a Shilling and Pence, or Pence only (as the caſe happens) which you may get by multiplying your Price by the Remainder, then divide by 10, the Quotient will be Pounds. *Laſtly*, for the odd Shillings, multiply the Figure cut off by two, taking in one, if there be an odd Shilling.

A Table of the Aliquot Parts of two Shillings,



D Ex-

EXAMPLE 1.

If 1 *L.* of Tobacco coſts 12*d.* what will 3567 *L.* coſt?

If 2*s.* was the Price, 3567 *L.* of Tob. would coſt [3567 Ps. of 2*s.*

But 12*d.* is $\frac{1}{2}$, there- 178 | 3-1
fore the Half of 2

S. 7

EXAMPLE 2.

8*d.* $\frac{1}{3}$ 3497 Buſhels at 8*d.*

Anſwer *L.* 116 | 5--1*s.*--4*d.*
2

S. 11--4*d.*

EXAMPLE. 3.

6*d.* $\frac{1}{4}$ 5799 *L.* of Tin at 6*d.*

Anſwer *L.* 144 | 9--1--6
2

S. 19--6*d.*

EXAMPLE 4.

4*d*. $\frac{1}{6}$ 4277 *L*. of Sugar at 4*d*.

Anſwer *L*. 71 | 2--1--8
20
S. 5--8 *d*.

EXAMPLE 5.

3*d*. $\frac{1}{8}$ 9479 Yards at 3*d*.

Anſwer *L*. 118 | 4--1--9
2
S. 9--9 *d*.

EXAMPLE 6.

2*d*. $\frac{1}{12}$ 8075 *L*. of Iron at 2*d*.

Anſwer *L*. 67 | 2--1--10
2
S. 5--10 *d*.

When your Price is any of the five Aliquot Parts following, *viz*. 1*d*. $\frac{1}{2}$; 1*d*; $\frac{3}{4}$ *d*; $\frac{1}{2}$ *d*; or $\frac{1}{4}$ *d*; *firſt*, find the Price of your Goods as if it was 3*d*; then divide this Money by the aliquot Part that your Price is of 3*d*: This laſt Quotient divided by 10, *&c*. as before, gives the Anſwer.

A Table of the Aliquot Parts of 3*d.*

d.		
1 $\frac{1}{2}$		$\frac{1}{2}$
1		$\frac{1}{3}$
0 $\frac{3}{4}$	is	$\frac{1}{4}$
0 $\frac{1}{2}$		$\frac{1}{6}$
0 $\frac{1}{4}$		$\frac{1}{12}$

Note, When your Queſtion is to be performed by two, three, or more Diviſions, work the firſt as in the ſix preceding Examples; and in many Queſtions, the ſecond, third, *&c.* will be perform'd much after the ſame Manner: Only obſerve, when you turn the remaining Two-Shilling Pieces into Shillings, you add the odd Shilling to them if there be one: Then divide again; the Quotient will be a Shilling, to be ſet down. So alſo when you reduce the remaining Shillings into Pence, add the odd Pence, if any be; dividing again and ſetting down the Quotient for Pence; reduce the Pence remaining into Farthings; adding the odd ones: And divide again, ſetting the Quotient down for Farthings. The ſame is to be done with the third Diviſion, *&c.*

Ex-

EXAMPLE 1.

3 *d.* $\frac{1}{8}$ 7958 Ounces at 1 *d.* $\frac{1}{2}$

1 $\frac{1}{2}$ is $\frac{1}{2}$ 994--1--6 the Price at 3*d.*

Anſwer *L.* 49 | 7--0--9 the Price at [1 $\frac{1}{2}$
2

S. 14--9 *d.*

EXAMPLE 2.

3 *d.* $\frac{1}{8}$ 17987 Yards at 1 *d.*

1 $\frac{1}{3}$ 2248--0--9 the Price at [3*d.*

Anſwer *L.* 74 | 9--0--11 the Price [at 1 *d.*
2

S. 18--11 *d.*

EXAMPLE 3.

3 *d.* $\frac{1}{8}$ 35687 *L.* at $\frac{1}{4}$ *d. per L.*

0 $\frac{3}{4}$ is $\frac{1}{4}$ 4460--1--9 the Price at [3*d.*

Anſwer *L.* 111 | 5--0--5 $\frac{1}{4}$ the Price [at $\frac{1}{4}$ *d.*
2

S. 10--5 $\frac{1}{4}$

Ex-

EXAMPLE 4.

3 *d.* $\frac{1}{8}$	7198 *L.* of Copperas at $\frac{1}{2}$ *d.*	
0 $\frac{1}{2}$ $\frac{1}{6}$	899--1--6 at 3 *d.*	
Anſwer *L.*	14 | 9--1--11 at $\frac{1}{2}$ *d.*	
	2	
	S. 19--11 *d.*	

EXAMPLE 5.

3 *d.* $\frac{1}{8}$	35879 Toys at $\frac{1}{4}$ *d.*	
0 $\frac{1}{4}$ $\frac{1}{12}$	4484--1--9 at 3 *d.*	
Anſwer *L.*	37 | 3--1--5 $\frac{3}{4}$ at $\frac{1}{4}$ *d.*	
	2	
	S. 7--5 $\frac{3}{4}$	

For the better underſtanding of the five foregoing Examples take the laſt as follows.

Firſt, By ſuppoſing the Price to be 2 *s.* you immediately change the Goods (*viz.* 35879 Toys) into Two-Shilling Pieces; but the Price in this being but one Farthing, which by the Table is the $\frac{1}{96}$ Part of Two Shillings, conſequently the Goods muſt coſt but a ninety ſixth Part of 35879 Two-Shilling Pieces; but to avoid a long and tedious Diviſion, you may make uſe of the Diviſors in the Table; or becauſe a Farthing is the $\frac{1}{12}$ Part of 3 *d.* find the Price

Price of your Goods as if it was 3*d.* ſaying, how many Eights in 35879; you will find 4484 and 7 Three-Pences over, which is 1*s.*-9*d.* which Sum, *viz.* 4484 Two-Shilling Ps. 1*s.*--9*d.* divided by 12, ſaying, the Twelves in 4484-1-9 gives you for the Anſwer 373 Two-Shilling Ps. 1*s.*--5*d.* ¾, which divide by 10 as before.

EXAMPLES for EXERCISE.

At all the Aliquot Parts in the Table, *viz.* 12*d.* 8*d*, &c. *per* Ell, What comes 3797 Ells to?

For Proof. See the Queſtions of this Caſe, worked with ſome Diverſity, in Caſe III. Part II.

CASE IV.

THE Price of the Integer being Pence under 2*s*, and thoſe an uneven Part of it; as 5, 7, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23*d.*

RULE.

Work for the greateſt even Part contained in your given Price, as in the laſt Caſe, and for what Pence are left, take Part or Parts out of the laſt Money, or out of ſome other above it,

it, then add all these Quotients together, lastly cut off the Figure in the Unit's Place, and multiply it by 2, taking in one if there be an odd Shilling as before. Examples follow.

What is the Price of 3871 Ounces at 5*d*, 7*d*, 11*d*, 13*d*, 17*d*, 19*d*, and 23*d*, *per* Ounce?

EXAMPLE 1. at 5*d*.

If the Price was 2*s*. 3871 Ounces would cost [3871. 2*s*. Ps.

4*d*. $\frac{1}{6}$ 645--0--4
1 $\frac{1}{4}$ 161--0--7

Answer *L*. 806--0--11
2

S. 12--11*d*.

EXAMPLE. 2.

6*d*. $\frac{1}{4}$ 3871 Ounces at 7*d*.

1 $\frac{1}{6}$ 967--1--6
161--0--7

Answer *L*. 1129--0--1
2

S. 18--1*d*.

Ex-

EXAMPLE 3.

3*d*. $\frac{1}{8}$ & 8*d*. $\frac{1}{3}$ 3871 Ounces at 11*d*.

	1290--0--8
	483--1--9
Anſwer *L*.	177 4--0--5
	2
	S. 8--5*d*.

EXAMPLE 4.

12*d*. $\frac{1}{2}$ 3871 Ounces at 13*d*.

1 $\frac{1}{12}$	1935--1--0
	161--0--7
Anſwer *L*.	209 6--1--7
	2
	S. 13--7*d*.

EXAMPLE 5.

12*d* $\frac{1}{2}$ 3871 Ounces at 17*d*.

4 $\frac{1}{3}$	1935--1--0
1 $\frac{1}{4}$	645--0--4
	161--0--7
Anſwer *L*.	274 1--1--11
	2
	S. 3*s*.--11*d*.

EXAMPLE 6.

12*d.* ½ 3871 Ounces at 19*d.*

6 ½ 1935--1--0
1 ⅙ 967--1--6
161--0--7

Anſwer *L.* 306 | 4--1--1
2

S. 9--1*d.*

EXAMPLE 7.

3*d.*⅛ & 8*d.*⅓ & 12*d.* ½ 3871 Ounces at 2⅔*d.*

1935--1--0
1290--0--8
483--1--9

Anſwer *L.* 370 | 9--1--5
2

S. 19--5*d.*

Tobacco at 9*d.* 10*d.* 14*d.* 15*d.* 16*d.* 18*d.* 20*d.* 21*d.* or 22*d. per L.* What comes 9573 *L.* to?

Theſe 9 Examples may be worked a ſhorter Way than by the laſt Rule, by working firſt with an aliquot Part (*viz.* 3*d.* 2*d*, &c.) that is contained a certain Number of Times in the given Price, and multiplying the Quotient by that Number of 3*ds*, 2*ds*, &c. Ex-

EXAMPLE 1.

3*d*. $\frac{1}{8}$ 9573 *L*. of Tobacco at 9*d*.

1196--1--3 the Price at 3*d*.

3

Anſwer *L*. 358 | 9--1--9 the Price at 9*d*.

2

S. 19--9*d*.

EXAMPLE 2.

2*d*. $\frac{1}{12}$ 9573 *L*. of Tobacco at [10*d*.

797--1--6 the Price at 2*d*.

5

Anſwer *L*. 398 | 8--1--6 the Price at [10*d*.

2

S. 17--6*d*.

EXAMPLE 3.

2*d*. $\frac{1}{12}$ 9573 *L*. of Tob. at 14*d*.

797--1--6 at 2*d*.

7

Anſwer *L*. 558 | 4--0--6

2

S. 8--6*d*.

EXAMPLE 4.

$3d.\ \frac{1}{8}$ 9573 *L.* of Tob. at 15 *d.*

1196--1--3

5

Anſwer *L.* 598 | 3--0--3

2

S. 6--3 *d.*

EXAMPLE 5.

$8d.\ \frac{1}{3}$ 9573 *L.* of Tob. at 16 *d.*

3191--0--0

2

Anſwer *L.* 638 | 2--0--0

2

S. 4--0 *d.*

EXAMPLE 6.

$6d.\ \frac{1}{4}$ 9573 *L.* of Tob. at 18 *d.*

2393--0--6

3

Anſwer *L.* 717 | 9--1--6

2

S. 19--6*d.*

Ex-

EXAMPLE. 7.

4*d*. $\frac{1}{6}$ 9573 *L*. of Tob. at 20*d*.

1595--1--0

5

Anſwer *L*. 797 | 7--1--0

2

S. 15--0*d*.

The Example above may be worked ſhorter, 20*d*. being the aliquot Part of a *L*. as in the laſt Queſtion of Caſe II.

EXAMPLE 8.

3*d*. $\frac{1}{8}$ 9573 of Tob. at 21*d*.

1196--1--3

7

Anſwer *L*. 837 | 6--0--9

2

S. 12--9*d*.

EXAMPLE 9.

2*d*. $\frac{1}{12}$ 9573 *L*. of Tob. at 22*d*.

797--1--6

11

Anſwer *L*. 877 | 5--0--6

2

S. 10--6*d*.

See

Or thus,

The Price at 2 *s.* 9573
deduct for 2 *d.* $\frac{1}{12}$ 797--1--6

Anſwer *L.* 877 | 5--0--6
2

S. 10--6 *d.*

See the Proof of theſe Queſtions in Caſe IV. Part II.

CASE V.

THE Price of Unity being Pence and Farthings under 2 *s*, *viz.* 1 *d.* $\frac{1}{4}$; 1 *d.* $\frac{3}{4}$; 2 *d.* $\frac{1}{4}$; 3 *d.* $\frac{1}{4}$; 4 *d.* $\frac{3}{4}$, and ſo on to 24 *d.* advancing a Penny in the Pence.

RULE.

For 1 *d.* $\frac{1}{4}$ and 1 *d.* $\frac{3}{4}$ work as if the Price was 3 *d.* and take the Parts. But for the reſt, *viz.* 2 *d.* $\frac{3}{4}$, 3 *d.* $\frac{1}{4}$, *&c.* work for the Pence firſt either at once, or twice, *&c.* as ſhall be moſt convenient. Then for the odd Farthing, or Farthings, take what Part they may be of this laſt or ſome other Part. *Laſtly*, add all the Quotients together, dividing the Total by 10, and mul-

multiplying by two as before, and you have the Anſwer.

EXAMPLE 1.

3*d*. $\frac{1}{8}$ 5411 Yards at 1*d*. $\frac{1}{4}$

676--0--9 at 3*d*.

1*d*. $\frac{1}{3}$ 225--0--11 at 1*d*.

$-\frac{1}{4}\frac{1}{4}$ 56--0--8 $\frac{3}{4}$ at 0 $\frac{3}{4}$

Anſwer *L*. 28 | 1--1--7 $\frac{3}{4}$ at 1*d*. $\frac{1}{4}$
2

S. 3--7 $\frac{3}{4}$

EXAMPLE 2.

3*d*. $\frac{1}{8}$ 7547 Pecks at 1*d*. $\frac{3}{4}$

1*d*. $\frac{1}{2}\frac{1}{2}$ 943--0--9

$-\frac{1}{4}\frac{1}{6}$ 471--1--4 $\frac{1}{2}$

78--1--2 $\frac{3}{4}$

Anſwer *L*. 55 | 0--0--7 $\frac{1}{4}$
2

S. 0--7 $\frac{1}{4}$

Ex-

EXAMPLE 3.

2*d.* $\frac{1}{12}$ 9532 Ells at 2*d.* $\frac{3}{4}$

- $\frac{1}{2}$ $\frac{1}{4}$ 794--0--8
- $\frac{1}{4}$ $\frac{1}{2}$ 198--1--2
$\frac{1}{4}$ 99--0--7 $\frac{1}{8}$

Answer *L.* 109 | 2--0--5
2
S. 4--5*d.*

EXAMPLE 4.

3*d.* $\frac{1}{8}$ 6542 Pounds at 3*d.* $\frac{1}{4}$

- $\frac{1}{4}$ $\frac{1}{12}$ 817--1--6
68--0--3 $\frac{1}{2}$

Answer *L.* 88 | 5--1--9 $\frac{1}{2}$
2
S. 11--9 $\frac{1}{2}$

EXAMPLE 5.

4*d.* $\frac{1}{6}$ 5976 Feet at 4*d.* $\frac{1}{4}$

- $\frac{1}{2}$ $\frac{1}{8}$ 996
- $\frac{1}{4}$ $\frac{1}{2}$ 124--1
62--0--6

Answer *L.* 118 | 2--1--6
2
S. 5--6*d.*

Ex-

EXAMPLE 6.

2*d.* $\frac{1}{12}$ 8191 Quires at 5*d* $\frac{1}{4}$

3*d.* $\frac{1}{8}$ of 2*s.*	682	--1--2
- $\frac{1}{4}$ $\frac{1}{4}$	1023	--1--9
	255	--1--11 $\frac{1}{4}$

Anſwer *L.* 196 | 2--0--10 $\frac{1}{4}$
2

S. 4--10 $\frac{1}{4}$

EXAMPLE 7.

3*d.* $\frac{1}{8}$ 973 Buſhels at 6*d.* $\frac{1}{4}$

3*d.* $\frac{1}{8}$	121	--1--3
- $\frac{1}{4}$ $\frac{1}{12}$	121	--1--3
	10	--0--3 $\frac{3}{4}$

Anſwer *L.* 25 | 3--0--9 $\frac{1}{4}$
2

S. 6--9 $\frac{1}{4}$

EXAMPLE 8.

6*d.* $\frac{1}{4}$ 4171 Cwt. at 7*d.* $\frac{3}{4}$

1*d.* $\frac{1}{2}$ $\frac{1}{4}$	1042	--1--6
- $\frac{1}{4}$ $\frac{1}{6}$	260	--1--4 $\frac{1}{2}$
	43	--0--10 $\frac{3}{4}$

Anſwer *L.* 134 | 6--1--9 $\frac{1}{4}$
2

S. 13--9 $\frac{1}{4}$

EXAMPLE 9.

2*d.* $\frac{1}{12}$ 3173 Dozens at 8*d.* $\frac{3}{4}$

6*d.* $\frac{1}{4}$ of 2*s.* 264--0--10
- $\frac{3}{4}$ $\frac{1}{8}$ 793--0--6
99--0--3 $\frac{3}{4}$

Anſwer *L.* 115 | 6--1--7 $\frac{3}{4}$
2

S. 13--7 $\frac{3}{4}$

EXAMPLE 10.

6*d.* $\frac{1}{4}$ 793 *L.* of Tob. at 9 $\frac{1}{4}$

3*d.* $\frac{1}{2}$ 198--0--6
- $\frac{1}{4}$ $\frac{1}{12}$ 99--0--3
8--0--6 $\frac{1}{4}$

Anſwer *L.* 30 | 5--1--3 $\frac{1}{4}$
2

S. 11--3 $\frac{1}{4}$

EXAMPLE. 11.

4*d.* $\frac{1}{6}$ 583 Pair at 10*d.* $\frac{3}{4}$

6*d.* $\frac{1}{4}$ of 2*s.* 97--0--4
- $\frac{3}{4}$ $\frac{1}{8}$ 145--1--6
18--0--5 $\frac{1}{4}$

Anſwer *L.* 126 | 1--0--3 $\frac{1}{4}$
2

S. 2--3 $\frac{1}{4}$

Ex-

EXAMPLE 12.

8 *d.* $\frac{1}{3}$ 973 Buſhels at 11 *d.* $\frac{1}{4}$

3 *d.* $\frac{1}{8}$ of 2*s.* 324--0--8
- $\frac{1}{4}$ $\frac{1}{12}$ 121--1--3
10--0--3 $\frac{1}{4}$

Anſwer *L.* 45 | 6--0--2 $\frac{1}{4}$
2

S. 12--2 $\frac{1}{4}$

EXAMPLE 13.

12 *d.* $\frac{1}{2}$ 359 *L.* at 13 *d.* $\frac{1}{4}$

1 *d.* $\frac{1}{12}$ 179--1--0
- $\frac{1}{4}$ $\frac{1}{4}$ 14--1--11
3--1--5 $\frac{3}{4}$

Anſwer *L.* 19 | 8--0--4 $\frac{3}{4}$
2

S. 16--4 $\frac{3}{4}$

EXAMPLE 14.

6 *d.* $\frac{1}{4}$ and 8 *d.* $\frac{1}{3}$ 197 Stone at 14 *d.* $\frac{3}{4}$

65--1--4
-- $\frac{3}{4}$ $\frac{1}{8}$ 49--0--6
6--0--3 $\frac{3}{4}$

Anſwer *L.* 12 | 1--0--1 $\frac{3}{4}$
2

S. 2--1 $\frac{3}{4}$

EXAMPLE 15.

12*d.* ½ 583 Gallons at 15*d.* ¼

3*d.* ¼ 291--1--0
-- ¼ ½ 72--1--9
16--0--1 ¾

Anſwer *L.* 37|0--0--10 ¾
2

S. 0--10 ¾

EXAMPLE 16.

12*d.* ½ 379 Square Yards at 16*d.* ¾

3*d.* ¼ 189--1--0
1*d.* ½ ½ 47--0--9
- ¼ ⅙ 23--1--4 ½
3--1--10 ¾

Anſwer *L.* 26|4--1--0 ¼
2

S. 9--0 ¼

EXAMPLE 17.

12*d.* ½ 851 *L.* at 17*d.* ¾

3*d.* ¼ & 2*d.* ⅙ 425--1--0
70--1--10
106--0--9
- ¾ ¼ 26--1--2 ¼

Anſwer *L.* 62|9--0--9 ¼
2

S. 18--9 ¼

Ex-

EXAMPLE 18.

12 *d.* ½ 1753 Drams at 18 *d.* ¼

3 *d.* ¾ 876--1--0
3 *d.* ¼ 219--0--3
- ¼ ½ 219--0--3
18--0--6 ¼

Anſwer *L.* 133 | 3--0--0 ¼
2

S. 6--0 ¼

EXAMPLE 19.

8 *d.* ⅓ 2051 Quarts at 19 *d.* ¾

8 *d.* ⅓ 683--1--4
3 *d.* ⅛ of 2 *s.* 683--1--4
- ¼ ½ 256--0--9
21--0--8 ¾

Anſwer *L.* 164 | 5--0--1 ¾
2

S. 10--1 ¾

EXAMPLE 20.

12 *d.* ½ 7189 Pecks at 20 *d.* ¾

6 *d.* ½ 3594--1--0
2 *d.* ⅓ 1797--0--6
- ¼ ⅛ of 6 *d.* 599--0--2
224--1--3 ¾

Anſwer *L.* 621 | 5--0--11 ¾
2

S. 10--11 ¾

Ex-

EXAMPLE 21.

12 *d.* ½ 477 Yards at 21 *d.* ½

8 *d.* ⅓ of 2 *s.* 238--1--0
1 *d.* ½ ⅛ of 12 *d.* 159--0--0
29--1--7 ½

Anſwer *L.* 42 | 7--0--7 ½
2

S. 14--7 ½

EXAMPLE 22.

12 *d.* ½ 855 Ells at 22 *d.* ¼

8 *d.* ⅓ of 2 *s.* 427--1--0
2 *d.* ¼ 285--0--0
- ¼ ⅛ 71--0--6
8--1--9 ¾

Anſwer *L.* 79 | 2--1--3 ¾
2

S. 5--3 ¾

EXAMPLE 23.

12 *d.* ½ 7631 Feet at 23 *d.* ¼

8 *d.* ⅓ of 2 *s.* 3815--1-- 0
3 *d.* ⅛ of 2 *s.* 2543--1-- 4
- ¼ 1/12 953--1-- 9
79--0--11 ¾

Anſwer *L.* 739 | 2--1--0 ¾
2

S. 5--0 ¾

To

To explain the Queſtions of this and the laſt Caſe, obſerve.

Firſt, That the 7631 Feet are immediately changed into 7631 Ps. of 2*s.* as before. But the Price 23*d.* $\frac{1}{4}$ being leſs than 2*s.* conſequently the 7631 Feet will come to leſs than 7631 Ps. of 2*s.* To get which Anſwer I work, *firſt*, for the greateſt aliquot Part, *viz.* 12*d.* that is contained in the given Price (as is directed in the Rule of Caſe IV. and V.) by taking the Half of the aforeſaid 2*s.* Ps. I do the like with 8*d.* the greateſt aliquot Part of the eleven Pence that is left, by dividing the ſaid 2*s.* Ps. by 3. And the 3*d.* that is yet left being the $\frac{1}{8}$ of 2*s.* I divide them by 8; then for the Farthing that is ſtill left being the $\frac{1}{12}$ of 3*d.* I divide this laſt Money by 12. *Laſtly*, I add all the four Quotients together, beginning with the Farthings; where I find three Farthings, which I ſet down: I then proceed to add up the Pence; where I find 11 and 9 to make 20*d.* that is, one Shilling to be carried, and 8*d.* to be ſet down: Again, the Shilling I have to carry to Three more makes Four Shillings; then, becauſe I am to carry one for every Two Shillings (that being the Denomination of my next Number) I ſet down an 0 and carry two; ſaying, 2 and 9 is 11, and 3 is 14, and 3 more is 17, and 5 more is 22, for which I ſet down 2 and carry two, as in common Addition. After the ſame Manner I add up all the other Ranks, and thus I have the Anſwer in the Denominations of Two-Shilling Pieces; Shillings, Pence and Far-

Farthings, which by Inſpection are *L.* 739--4*s.* 8*d.* ¼.

EXAMPLES for EXERCISE.

What is the Price of 917 Pecks at 1*d.* ¼; 1*d.* ½; 2*d.* ¼; 3*d.* ¼; 4*d.* ¼; and ſo on, to 24*d.* advancing a Penny in the Pence?

See many of the Queſtions in this Caſe, worked a ſhorter Way, in Caſe V. Part II.

CASE VI.

THE Price of the Unit being Shillings, with Pence, or Farthings; or Shillings, Pence and Farthings.

RULE.

For the Shillings, work as in Caſe I. or II. and for the Pence and Farthings take what Part, or Parts, they may be of this laſt Money, or of the Line of Two Shillings, or ſome other. *Laſtly*, add all together, and divide and multiply, *&c.* as before, and you have the Anſwer.

Ex-

EXAMPLE 1.

For 2*s.* 173 Stone at 2*s.* 5*d.* ½

4*d.* ⅙	28--1--8	
1*d.* ¼	7--0--5	
- ½ ½	3--1--2 ½	
Anſwer *L.*	21	2--1--3 ½
		2
	S.	5--3 ½

EXAMPLE 2.

For 2*s.* 579 Skins at 3*s.* 2*d.*

1*s.* ½	289--1--0	
2*d.* ⅙	48--0--6	
Anſwer *L.*	91	6--1--6
		2
	S.	13--6*d.*

EXAMPLE 3.

1073 *L.* of Coffee at 4*s.* [8*d.* ¾

2

2146

6*d.* ¼	268--0--6	
2*d.* ⅓	89--0-10	
- ¼ ⅛ of 6*d.*	33--1--0 ¾	
Anſwer *L.*	253	7--0--4 ¾
		2
	S.	14--4 ¼

EXAMPLE 4. 7100 Gallons of Brandy [at 5 *s.* 8 *d.*

2 X ½

14200

3550

8 *d.* ⅓ of 2 *s.* 2366--1--4

Anſwer *L.* 2011 | 6--1--4

2

S. 13--4 *d.*

EXAMPLE 5. 733 Cwt. at 6 *s.* 5 *d.* ¼

3

2199

4 *d.* ⅙ 0--1--2 122--0--¼

1 *d.* ¼ 0--0--8 30--1--½

- ¼ ¼ 7--1--3 ¼

Anſwer *L.* 235 | 9--0--8 ¼

2

S. 18--8 ¼

EXAMPLE 6. 385 Diſhes at 7 *s.* 0 *d.* ¼

3 ½

1155

192--1--0

2 *d.* ⅙ X 32--0--½

- ¼ ⅛ 4--0--0 ⅜

Anſwer *L.* 135 | 1--1--0 ¼

2

S. 3--0 ¼

Note,

Note, The Money, with the Croſs againſt it, in this and ſuch like Queſtions, is not to be added to the other Sums of Money. A Learner may even croſs or cancel that ſame Money.

EXAMPLE 7.

857 Hats at 8 *s.* 6 *d.*

4

3428

6 *d.* $\frac{1}{4}$ of 2 *s.* 214--0--6

Anſwer *L.* 364 | 2--0--6

2

S. 4--6 *d.* $\frac{1}{2}$

EXAMPLE 8.

1504 Cwt. of Ginger at [9 *s.* 2 *d.* $\frac{1}{4}$

4 $\frac{1}{2}$

6016

752

2 *d.* $\frac{1}{6}$ 125--0--8

- $\frac{1}{4}$ $\frac{1}{8}$ 15--1--4

Anſwer *L.* 690 | 9--0--0

2

S. 18--0 *d.*

EXAMPLE 9.

3577 Yards of Broad-
5 [cloth at 10*s*. 9*d*.

17885

6*d*. $\frac{1}{4}$ of 2*s*. 894--0--6

3*d*. $\frac{1}{2}$ 447--0--3

Anſwer *L*. 1922|6--0--9
2

S. 12--9*d*.

EXAMPLE. 10.

792 Coats at 11*s*. 4*d*. $\frac{1}{2}$
5 $\frac{1}{2}$

3960
396

4*d*. $\frac{1}{3}$ 132
- $\frac{1}{2}$ $\frac{1}{8}$ 16--1--0

Anſwer *L*. 450|4--1--0
2

S. 9--0*d*.

EXAMPLE 11.

653 Barrels at 12*s*. 3*d*. $\frac{1}{2}$
6

3918

3*d*. $\frac{1}{8}$ of 2*s*. 81--1--3
- $\frac{1}{2}$ $\frac{1}{6}$ 13--1--2 $\frac{1}{2}$

Anſwer *L*. 401|3--0--5 $\frac{1}{2}$
2

S. 6--5 $\frac{1}{2}$

Ex-

EXAMPLE 12.

1169 *L.* of Cinnamon at 6 ½ [13*s.* 7*d.*

	7014
	584--1--0
6*d.* ½	292--0--6
1*d.* ⅙	48--1--5 ½
Anſwer *L.*	793 | 9--0--11 | 2

S. 18--11 *d.*

EXAMPLE 13. 714 Cwt. at 14*s.* 11*d.* ¼

7

	4998
8*d.* ⅓ of 2*s.*	238
3*d.* ⅛ of 2*s.*	89--0--6
¼ ½ 1 2 1	7--0--10 ½
Anſwer *L.*	533 | 2--1--4 ½ | 2

S. 5--4 ¼

EXAMPLE 14. 284 Pieces of Linnen at 7 ½ [15*s.* 4*d.*

	1988
	142
4*d.* ⅓	47--0--8
Anſwer *L.*	217 | 7--0--8 | 2

S. 14--8 *d.*

Ex-

EXAMPLE 15.

951 *L.* of Mace at 16*s.*
8 [0*d.* ½

7608--0--0

2*d.* ½ of 2*s.* X 79--0--6

- ½ ¼ 19--1--7 ½

Answer *L.* 762 | 7--1--7 ½
2

S. 15--7 ½

EXAMPLE 16. 5173 Hides at 17*s.* 2*d.* ¼
8 ½

41384
2586--1--0
2*d.* ⅙ 431--0--2
- ¼ ⅛ 53--1--9 ¼

Answer *L.* 4443 | 5--0--11 ¼
2

S. 10--11 ¼

EXAMPLE 17. 544 Brewers Butts at 18*s.*
9 [3*d.* ¾

4896
3*d.* ⅛ of 2*s.* 68
- ¼ ¼ 17

Answer *L.* 498 | 1
2

S. 2

Ex-

EXAMPLE 18.

571 Loads at 19*s.* 0*d.* $\frac{1}{4}$

$9\frac{1}{2}$

5139
285--1--0

3*d.* $\frac{1}{4}$	X	71--0--9
$-\frac{3}{4}$ $\frac{1}{4}$		17--1--8 $\frac{1}{4}$
Answer *L.*	544	2--0--8 $\frac{1}{4}$
	2	
	S.	4--8 $\frac{1}{4}$

EXAMPLES for EXERCISE.

What will 4589 Gallons coſt at 2*s*, 3*s*, 4*s*, *&c.* to 20*s*, with Pence, or Farthings, or with Pence and Farthings annexed?

For Proof, See the Queſtions of this Caſe in Caſe VI. Part II.

Many Queſtions in the foregoing Caſes may be worked by the Rule in the following.

CASE

CASE VII.

THE Price of the Integer being Pounds, Shillings, Pence and Farthings, or any other other Price, to find the Value of any Quantity of the ſame.

RULE.

Multiply the Price by the given Quantity and you have the Anſwer. But ſometimes, when it ſhall be more convenient, multiply your Quantity by the Price.

EXAMPLE 1.

2 Yards of Muzlin at *S.* 5--3*d.* *per* Yard.

2

Anſwer *S.* 10---6*d.*

EXAMPLE 2.

3 Pieces of Cambrick at *L.* 7--13*s.*-5*d.* *per* Ps.

3

Anſwer *L.* 23--00--3*d.*

Note, That in adding, ſubſtracting, multiplying and dividing of Money, work the ſecond Place of the Shillings, as Angels.

Ex-

EXAMPLE 3.

4 Stone of Beef at *S.* 2—4*d.*

4

Anſwer *S.* 9—4*d.*

EXAMPLE 4.

5 *L.* of Tea at 8*s.*-10*d.* ¼

5

Anſwer *L.* 2—4 —5 ¼

EXAMPLE 5.

6 Cwt. of Sugar at *L.* 1—14*s.*—07*d.* ¼

6

Anſwer *L.* 10—07 —10 ½

EXAMPLE 6.

7 Pipes of Wine at *L.* 11—17*s.*—08*d.* ¼

7

Anſwer *L.* 83—04 —01 ¼

EXAMPLE 7.

8 Ps. of Diaper at 13*s.*—10*d.* ½ *per* P.

8

Anſwer *L.* 5—11 —00

EXAMPLE 8.

9 Cwt. at *L.* 2—17*s.*—11*d.* ¼ *per* Cwt.

9

Anſwer *L.* 26—01—5 ¼

EXAMPLE 9.

11 New Butts at *L.* 1—12*s.*—7*d.* *per* Butt

11

Anſwer *L.* 17—18—5

EXAMPLE 10.

12 Ps. of Broad Cloth at *L.* 11—19*s.* *per* Piece

12

Anſwer *L.* 143—08

More EXAMPLES.

What's the Price of 2 Cwt, 3 Cwt, 4 Cwt, *&c.* to 13 Cwt. at *L.* 3. 13*s.* 7*d.* ¼ *per* Cwt.?

A little Exerciſe will ſoon render ſuch Multiplications as theſe very eaſy, due Regard being had to the ſeveral Denominations, and alſo how many of the leſſer make one of the greater, and ſo carry from one Denomination to the next, as you do in Addition of the ſame, whether in Money, Weight or Meaſure.

If 1 Firkin of Soap coſts *L.* 1. 19*s.* 8*d.* ¼, what is the Price of 10, or 20, or 30, *&c.* to 120 Firkins?

RULE.

Place the Quantity of Goods under the Price for a Multiplier, as before; then multiply only by the ſignificant Figures 1, 2, 3, 4, *&c.* and inſtead of ſetting the odd Farthings, Pence and Shillings in their reſpective Places, as in the laſt Queſtions, put them in a Place apart orderly, one under another, as Units under Units, and Tens under Tens; but place the Pounds in their proper Places; that is, ſet the firſt Figure of your Pounds in the ſame Place from Units as your Multiplier is from it: Then to fill up the vacant Places of your Product, put as many Cyphers, as belong to your multiplying Figure, to the firſt odd Money only, whether it be Farthings, Pence, *&c.* reduce theſe odd Farthings, Pence or Shillings into Pounds, *&c.* which put in thoſe vacant Places of your Pounds, Shillings, Pence and Farthings, and you have done. The ſame is to be done when the Quantity is 100, 200, *&c.* or 1000, 2000, *&c.* or 10000, *&c.*

Note, If there ſhould be no odd Shillings, Pence and Farthings, the vacant Places muſt be fill'd with Cyphers.

EXAMPLE 1.

10 Firkins of Soap at *L.* 1—19*s.*—8*d.* ¼

4)30(½
12)87(3
20)19|7(17
9

10

Answ. *L.* 19—17 —3 ½

I have no more to do here than to set down the odd Farthings, Pence and Shillings one under another, adding the Cypher, *&c.* as by Rule.

EXAMPLE 2.

20 ditto at *L.* 1—19*s.*—8*d.* ¼

20

39—14 —7*d.*

4)20
12)55(7
20)19|4(14
91

EXAMPLE 3.

30 Firkins at *L.* 1—19*s.*—8*d.* ¼

4)10(½
12)22(10
20)19|1(11
9

30

Answ. *L.* 59—11 —10 ¼

EXAMPLE 4.

40 ditto at *L.* 1—19*s.*—8*d.* ¼

0
12)110(2
20)18|9(9
9

40

Answ. *L.* 79—09 —2*d.*

Ex-

EXAMPLE 5.

4)30(½ 50 Firkins at *L.* 1—19*s.*—8*d.* ¼
12)77(5 50
2|0)18|6(6 Anſwer *L.* 99—6—5*d.* ½
9

EXAMPLE 6.

60 Firkins at *L.* 1—19*s.*—8*d.* ¼ 60

Anſwer *L.* 119—3—9*d.*

4)20
12)45(9
2|0)18(3
9

EXAMPLE 7.

70 ditto at *L.* 1—19*s.*—8*d.* ¼ 70

4)10(½
12)12(0
2|0)18|1(
9|

Anſw. *L.* 139—1—0 ½

EXAMPLE 8.

80 Firkins at *L.* 1—19*s.*—8*d.* ¼ 80

Anſwer *L.* 158—18—4

0
12)100(4
2|0)17|3(18
8

EXAMPLE 9.

90 Firkins at *L.* 1—19*s.*—8*d.* ¼ 90

Anſwer *L.* 178—15—7 ½

4)30(½
12)67(7
2|0)17|5(15
8

EX-

EXAMPLE 10.

110 Firkins at *L.* 1—19*s.*—8*d.* ¾.

4)10(½
12)02(2
2|0)17|0(10
8

110
Answ. *L.* 218—10—2*d.* ½

EXAMPLE 11.

120 Firkins at *L.* 1—19*s.*—8*d.* ¾

120

Answer *L.* 238—7—6

0
12)90(6
2|0)16|7
8

You may obſerve, that in the two former Examples, and all of that Kind, where you have 11 and 12 with a Cypher or Cyphers annex'd, the ſhorteſt Way will be to multiply by them at once.

EXAMPLE 12.

100 Tuns at *L.* 7—17*s.*—8*d.* ¾ *per* T.

100

Anſwer *L.* 788—12—11

4)300
12)875(11
2|0)177|12(12
88

In this Example, as alſo in all others where the Quantity is an Unit with Cyphers, you have no more to do than to ſet down the odd Farthings, Pence, *&c.* in a Place apart, adding the Cyphers, *&c.* as by Rule.

Ex-

EXAMPLE 13.

300 Hds. at *L.* 1—11*s.*—6*d.*

300

Anſwer *L.* 472—10— 0

12)600
2|0)145|0(10
72

EXAMPLE 14.

900 Cwt. at *L.* 4—11*s.*—7*d.* $\frac{1}{8}$

900

Anſwer *L.* 4123—11 —10 $\frac{4}{8}$ Equal to $\frac{1}{2}d.$

8)500($\frac{4}{8}$
12)862(10
2|0) 47|1(11
23

EXAMPLE 15.

1100 Ps. of Lin. at *L.* 1-11*s.*-5*d.* $\frac{1}{4}$

1100

Anſwer *L.* 1729-01 -3

4)300
12)975(3
2|0)58|1(1
29

EXAMPLE 16.

1200 Hds. of Tob. at *L.* 7-14*s.*-10 $\frac{1}{8}$

1200

Anſwer *L.* 9294- 7 -6

8)400
12)1050(6
2|0)188|7
94

EXAMPLE 17.

1000 Bales at *L.* 42—16*s.*—7*d.*

1000

Anſwer *L.* 42829 —3 —4

12)7000(4
2|0)1658|3
829

Ex-

EXAMPLE 18.

7000 Tuns at *L.* 63—11*s.*—6*d.*

7000

Answer *L.* 445025—00—00

12)6000
2|0)650|0
025

EXAMPLE 19.

12000 Pieces at *L.* 1—13*s.*—5*d.* $\frac{1}{4}$

12000

Answer *L.* 20087—10—0

0
12)9000
2|0)175|0(10
087

Note, That, you place as many Figures in the Pounds Place, as there are Cyphers belonging to the Figure you multiply by. As is done in the two preceding Examples.

EXAMPLE 20.

80000 Cwt. at *L.* 2—11*s.*—7*d.* $\frac{1}{2}$

80000

Answer *L.* 206500—00—00

0
0
2|0)13000|0
6500

EXAMPLE 21.

18 Ps. of Bag Holl. at *L.* 3-16*s.*-10*d.* $\frac{1}{4}$

18

30-15 - 2*d.* -
38- 8 -11 $\frac{1}{2}$

Answer *L.* 69- 4 - 1 $\frac{1}{2}$

4)30(2
12)107(11
2|0)16|8
8

Ex-

EXAMPLE 22.

76 Pipes of Wine at *L.* 23—18*s.*—11*d.*

12)50(2
2|0)12|4(4
6

76

143—13— 6
1676— 4— 2

Anſwer *L.* 1819—17— 8

EXAMPLE 23.

362 Tuns at *L.* 15—17*s.*—07*d.* $\frac{3}{8}$

8)100($\frac{4}{8}$
12)1012(4
2|0)128|4(4
64

362

31— 15— 2 $\frac{6}{8}$
952— 16— 10 $\frac{4}{8}$
4764— 4— 4 $\frac{4}{8}$

8)20($\frac{4}{8}$
12)82(10
2|0)5|6(16
2

Anſwer *L.* 5748— 16— 5 $\frac{6}{8}$ Equal to $\frac{1}{4}$*d.*

This laſt Example, as alſo the two preceding, are performed in all Reſpects as the foregoing of this Caſe; theſe of this Sort being only compoſed of two or more of thoſe; and adding all the Products together, as this laſt is compoſed of three of them, *viz.* the 1ſt Product is made of that where the Quantity is 2; the next of that where the Quantity is 60; and the 3d of that where the Quantity is 300.

EXAMPLE 24.

2347 Cwt. at *L.* 2—14*s.*—5*d.* ¾

	2347	
4)2000		
12)11500(4	19— 01 —4 ¼	
20) 8958(18	108— 19 —2	
447	817— 3 —9	
	5447— 18 —4	

Anſwer *L.* 6393— 2 —7*d.* ¼

0	
12)110(2	
20)17|9(19	
8	
4)100	
12)525(9	
20)34|3(3	
17	

Obſervation. In Examples of this Kind, the Number of Cyphers, annex'd to the firſt odd Money, will immediately diſcover to what Multiplier the Work apart belongs; for if 1 Cypher be added, the Multiplier ſtands in the Ten's Place; if Two be added, in the Hundred's Place, *&c.*

EXAMPLE 25.

What comes the Victualling of 22606 Seamen to, for 9 Months at *L.* 4—16*s.*—8*d. per* Man?

	22606	
12)40000(4	29— 00 —0	12)4000(4
20)13333|3(13	2900— 00 —0	20)1333|3(13
6666	9666— 13 —4	666
	96666— 13 —4	

Anſwer *L.* 109262 — 6 — 8

EXAMPLE 26.

777 Cheſts at *L.* 5—13*s.*—7*d.* ¼

	777	
4)300		4)30(½
12)275(11	39— 15 —2 ¾	12)27(3
20)152|2(2	397— 12 —3 ½	20)15|2(12
76	3976— 2—11	7

Anſ. *L.* 4413— 10 — 5 ¼

In

In ſuch Queſtions as theſe two laſt, where there are two or more Figures alike in the Multiplier, the Operation will be very eaſy; for when you have multiplied by the firſt of the ſimilar Figures, there will be no more to do than to ſet down the ſame Pounds, only in their proper Places; alſo ſet down the ſame odd Farthings, Pence, *&c.* as belong to the ſame multiplying Figure, in another Place, annexing the proper Number of Cyphers, and divide as before.

Example the 25th perform'd with fewer Figures, by the Principle of 2*s.*

The Anſwer at 2*s. per* Man is 22606 Ps. of 2*s.*

22606 Seamen at *L.* 4 16*s.* 8*d.*
48 — 10
180848 — 48 Ps. of 2*s.*
90424

8*d.* $\frac{1}{3}$ of 2*s.* 7535—0—8

Anſwer *L.* 109262 | 3—0—8*d.*
as before | 2
6——8*d.*

Note, That any Number of Pounds and Shillings are turn'd into Pieces of two Shillings, by multiplying the Pounds by 10, and taking in or adding the Two-Shilling Pieces, contained in the Shillings; and this may be done by Inſpection.

EXAMPLE 27.

7007 Fod. of Lead at *L.* 14—13*s.*—5*d.* $\frac{3}{4}$ *pr.* Fod.

4)1000 — 7007

12)4250(2

2|0)1435|4(14

L. 717

102— 14 —4 $\frac{1}{4}$

102717— 14 —2

102820— 08 —6 $\frac{1}{4}$ Anſw.

1 Far. } This is the Order of placing the odd
4*d.* } Farth. Pence, *&c.* before the Cyphers
14 *s.* } are annexed, and Diviſions compleated.

In this Example alſo, becauſe there are two Figures alike in the Multiplier, there is no need of a 2d Multiplication; for you have Nothing more to do than to place the ſame 102 Pounds in their proper Places, anſwerable to their Multiplier, and take the odd Farthings, Pence, and Shillings, and place them one under another according to the Rule, annexing a due Number of Cyphers to the firſt odd Money, which in this Example is Farthings. Then divide and add as in the former Examples of this Kind.

EXAMPLE 28.

3000 Cwt. at *L.* 2—9*s.*—5*d.* $\frac{1}{4}$ — 3000

Anſwer *L.* 7421—17—6*d.*

4)1000(

12)5250(6

2|0)8437(17

421

For

For a farther Illuſtration of theſe Examples, I ſay,

It is evident, that in this laſt Queſtion the 3000 Cwt. muſt needs coſt 3000 times *L.* 2 9*s.* 5*d.* $\frac{3}{4}$. To obtain which, I multiply the Three Farthings by 3, ſaying, 3 times 3 makes 9, *&c.* which Operation is indeed but ſeemingly ſo; for in Reality it is 3000 times 3 Farthings make 9000 Farthings, which divided by 4 make 2250 Pence: That is, 2 Thouſand Pence to be carried to the next Denomination of Pence, and 1000 Farthings (equal to 250 *d.*) to be ſet down. Then I proceed, ſaying, 3000 times 5 Pence make 15000 Pence, which, with the 2 Thouſand Pence to be carried, make 17000 Pence, which, divided by 12, make 1416*s.* 8*d.* That is, 1 thouſand Shillings to be carried to the Shillings, and 5000 Pence (equal to 416*s.* 8*d.*) to be ſet down: Then I go on, ſaying, 3000 times 9 Shillings make 27000 Shillings; which, with the 1 Thouſand to be carried, make 28000 Shillings; which divided by 20, make *L.* 1400. That is, 1 Thouſand Pounds to be carried, and 8000 Shillings (equal to 400 *L.*) to be ſet down. *L*aſtly, 3000 times 2 Pounds make 6000 Pounds; which, with the 1 thouſand Pounds to be carried, make 7 thouſand Pounds to be ſet down in its proper Place; which with the Pounds in the 1000 odd Farthings, 5000 odd Pence, and 8000 odd Shillings, make in all for the Anſwer *L.* 7421—17*s.*—6*d.*

Ex-

EXAMPLE 29.

5000 Bales at *L.* 18—18*s.*—4*d.* ¾

5000

94

4)3000

12)11750(2′

20)1197|9(19

598

The Figures 94, as they are now ſet down, ſhew the Order of the Operation, before the vacant Places are fill'd up with the odd Money, *viz. L.* 598—19*s.*—2*d.*

To illuſtrate the Rule in Page 51, I ſhall explain this laſt Example in a Manner ſomewhat different from the Foregoing.

Firſt, I multiply the Price, *viz. L.* 18—18*s.*—4*d.* ¾ by the given Quantity 5000, multiplying only by the ſignificant Figure 5, ſaying, 5 times 3 Farthings is 15 Farthings, or 3*d.* ¾; for which I ſet 3 Farthings in a Place apart, and carry 3*d*: Then I ſay, 5 times 4*d.* is 20*d.* and the 3*d.* to be carried make 23*d.* or 1*s.* and 11*d.* That is the 11*d.* to be ſet down in the Place apart under the 3 Farthings, *viz.* Units under Units, *&c.* and 1 Shilling to be carried. I then proceed, ſaying, 5 times 8 Shillings makes 40*s.* and 1*s.* to be carried makes 41*s.* That is 1 Shilling to be ſet down in the Place apart under the Unit Figure of the odd 11*d.* and 4 Angels to be carried. Again I proceed, ſaying, 5 times 1 Angel is 5 Angels, which, with the 4 Angels to be carried, make 9 Angels, or 4 *L.* and 1 Angel, which 1 Angel I ſet down in the Place

Place apart to the odd Shilling, and it makes it 11*s.* and 4 *L.* to be carried. Again, I ſay, 5 times 8 Pounds make 40 *L*, which, with the 4 *L.* to be carried, make 44 *L*, for which I ſet down a 4 in the Thouſand's Place of the Pounds (becauſe the Multiplier 5 is in that Place) and I carry 4. Laſtly, I ſay, 5 times 1 is 5, which, with the 4 to be carried, makes 9; which ſet down to the 4, it makes 94. Then to fill up the vacant Places of the Pounds, Shillings, Pence and Farthings, put 3 Cyphers (as by the Rule) to the firſt odd Money only, which here is 1 Farthing (for there is no Neceſſity of putting them to the odd Pence and Shillings, but by Suppoſition) this will make 1000 Farthings, which divide by 4, and you reduce them into Pence. Theſe, together with the 11 odd Pence before ſet down, make all the odd Pence, which reduce into Shillings, and Pounds. Theſe Pounds, with the remaining Shillings, Pence, and Farthings, being plac'd to the 94, ~~before~~ ſet down, give you for the Anſwer *L.* 94598—19*s.*—2*d.*

It will ſoon appear to a Perſon but a little exerciſed in the Method of theſe Operations, that he may omit the ſetting down of ſeveral Figures, ſuch as the ſeveral Diviſors 4, 12, 20. And alſo when he divides the Shillings to reduce them into Pounds, he may at the ſame Time place them to the Pounds of the Product; as is done by working the laſt Example again, as follows, *viz.*

5000

5000 Bales at *L.* 18—18*s.*—04*d.* ¾ 3000
5000 11750(2
11971)
Anſwer *L.* 94598—19—2

Or thus;

Place the Pounds of the Product under the odd Shillings, ſo that the firſt Figure you ſet down of the Pounds, may ſtand under the Angels of the Shillings; then annex Cyphers to the firſt odd Money, and divide as before for the Anſwer; as by the following Example.

5000 Bales at *L.* 18—18*s.*—4*d.* ¾
5000
3000
11750(2
11971)
Anſwer *L.* 94598—19—2

EXAMPLES for EXERCISE.

What Money muſt I pay for 2 Cwt, or 3 Cwt, *&c.* to 12 Cwt; and alſo for 20 Cwt. or 30, *&c.* to 120 Cwt; and alſo for 200 Cwt, 300 Cwt, *&c.* to 1200 Cwt; as alſo for 2000 Cwt, 7000 Cwt; 17 Cwt, 69 Cwt, 278 Cwt, 3564 Cwt, 44 Cwt, 107 Cwt, and 3003 Cwt, at *L.* 2—13—7 ¾ *per* Cwt?

The

The Manner of proving theſe Examples may be ſeen in Caſe VII. of Part II.

CASE VIII.

BEing to find the Price of a Quantity of Goods, that hath odd Weight or Meaſure annex'd.

RULE.

Firſt, Work for the integral Part, by ſome of the preceding Rules, not regarding the odd Weight or Meaſure. When you have ſo done, make a ſecond Operation for this odd Weight or Meaſure, by taking ſuch Part, or Parts, of your given Price, as the odd Weight or Meaſure may happen to be, of the given Unit. This Money, added to the Value of the integral Part, gives the Anſwer.

The following Tables, being neceſſary for the reſolving of the following Examples, ſhould be perfectly learnt by Heart.

Tables of Weight. The even Parts.

Of a Tun.			Of a Cwt.			Of ½ Cwt.		Of ¼ Cwt.	
Cwt.			lb			lb		lb	
10	is	½	56	or 2 qrs.	is ½	28	is ½	14	is ½
5		¼	28	or 1 qr.	¼	14	¼	7	¼
4		⅕	16		⅐	8	⅐	4	⅐
2	½	⅛	14		⅛	7	⅛		
2		1/10							
1	¼	1/16							
1		1/20							

Other Tables (both for Weight and Meaſure) you may make at your Leiſure, as you want them, by obſerving the Nature and Conſtruction of theſe.

I ſhall begin this Caſe by working a few Examples, where the Quantity given is but a Part or Parts of an Unit or whole Thing.

EXAMPLE 1.

What's the Price of 56 lb of Loaf Sugar at *L.* 4 - 12*s.* *per* Cwt.

56 lb is ½ *L.* 2 - 6*s.* Anſwer.

EXAMPLE 2.

56 lb of Coffee at *L.* 21 - 17*s.* - 7*d.* ¼ *per* Cwt.

56 lb is ½ Anſ. *L.* 10 - 18 - 9 ¾ ½

Ex-

EXAMPLE 3.

28 ℔ of Tea at *L.* 37 - 13*s.* - 9*d.* ¼ *per* Cwt.

28 ℔ ¼ Anſwer *L.* 9 - 08 - 5 ¼ ¼

EXAMPLE 4.

16 ℔ at *L.* 3 - 17*s.* - 7*d.* ¼ *per* Cwt.

16 ℔ ⅐ Anſwer. *L.* 0 - 11 - 1 ⅐

EXAMPLE 5.

84 ℔ at *L.* 3 - 17*s.* - 7*d.* ¼ *per* Cwt.

56 ½ 1 - 18 - 9 ¾ ½
28 ½ 0 - 19 - 4 ¾ ¼

2 - 18 - 2 ¾ ¼

EXAMPLE 6.

12 ℔ of Tob. Stems at 14*s.* - 6*d.* *per* Cwt.

First work for 56 ℔ ½ 7 - 3

8 ⅐ 1 - 0 ¼ ⅐
4 ½ 0 - 6 ⅐

Anſwer *S.* 1 - 6 ½ ⅐

In working Examples of this Kind, whatever remains, after dividing of the Farthings upon the firſt Diviſion, ſet it down for a

Part, or Parts of a Farthing; the Diviſor will be the Number of Parts, or Pieces, that goes to make a Farthing; which Diviſor you may ſet down either over or under thoſe Pieces or Parts, as is done in the Operation of theſe Examples. So alſo when you make a ſecond, third, *&c.* Diviſion you muſt reckon theſe Parts to be Money, and divide them after the ſame Manner as you do Shillings, Pence, and Farthings; and if any Thing remain at the End of theſe Diviſions, it muſt be ſet down for Money of a new Denomination. Do the like with the other Diviſions, ſtill keeping your Money in each Column of one and the ſame Name or Denomination, as in Shillings, Pence, and Farthings; by which Means you will have an exact Anſwer to your Queſtion, without any Loſs. Then add altogether, obſerving how many of the ſmalleſt Pieces make one of the next larger Pieces, *&c.* and ſo carry accordingly.

EXAMPLE 7.

72 lb at *L.* 8 - 13*s.* - 5*d.* $\frac{3}{4}$ *per* Cwt.

56 lb $\frac{1}{2}$	4	6	8	$\frac{3}{4}$ $\frac{1}{2}$
16 lb $\frac{1}{7}$	1	4	9	$\frac{1}{4}$ $\frac{1}{2}$ $\frac{2}{7}$
Anſwer *L.*	5	11	6	$\frac{1}{4}$ $\frac{2}{4}$ $\frac{2}{7}$

Ex-

EXAMPLE 8.

49 lb at *L.* 5 - 14*s.* - 05*d.* $\frac{3}{4}$ *per* Cwt.

28	$\frac{1}{4}$	1	- 08	- 7	$\frac{1}{4}$	$\frac{3}{4}$	
14	$\frac{1}{2}$	0	- 14	- 3	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{3}{2}$
7	$\frac{1}{2}$	0	- 7	- 1	$\frac{3}{4}$	$\frac{1}{4}$	$\frac{3}{4}$
Anſwer *L.*		2	- 10	- 1	$\frac{0}{4}$	$\frac{0}{4}$	$\frac{1}{4}$

EXAMPLE 9.

90 lb at *L.* 6 - 17*s.* - 5*d.* $\frac{3}{4}$ *per* Cwt.

56	$\frac{7}{2}$	3	- 8	- 8	$\frac{3}{4}$	$\frac{1}{2}$		
28	$\frac{1}{2}$	1	- 14	- 4	$\frac{1}{4}$	$\frac{3}{4}$		
4	$\frac{1}{7}$	0	- 4	- 10	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{5}{7}$	
2	$\frac{1}{2}$	0	- 2	- 5	$\frac{1}{4}$	$\frac{3}{4}$	$\frac{2}{7}$	$\frac{1}{2}$
Anſwer *L.*		5	- 10	- 5	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{0}{7}$	$\frac{1}{2}$

In the following Examples, for the Sake of Diſpatch, the Parts of a Farthing, and the Parts of thoſe Parts, *&c.* will be ſet down with ſingle Figures only, and the ſeveral Diviſors belonging to each of thoſe Parts, ſet over the Head of them, but parted from them by a ſmall Daſh, as is done by ſetting the laſt Example down again; by Way of Illuſtration.

Note, When the Diviſor is 2, and there remains 1, reckon it $\frac{2}{4}$ equal to $\frac{1}{2}$, it will be a Means of making fewer Figures.

The

The laſt Example ſet down thus,

90 lb at *L.* 6 - 17*s.* - 5*d.* ¼ *per* Cwt.

56	½	3 -	8 -	8	¼ 4/2
28	½	1 -	14 -	4	¼ 3
4	1/7	0 -	4 -	10	¾ 2 - 5/7
2	½	0 -	2 -	5	¼ 3 - 2 - 4/2
Anſwer *L.*		5 -	10 -	5	½ 3 - 0 - 2

EXAMPLE 10.

97 lb at *L.* 3 - 13*s.* - 7*d.* ¼ *per* Cwt.

56	½	1 -	16 -	9	½ 4/2
28	½	0 -	18 -	4	¾ 1
7	¼	0 -	4 -	7	- 3 - 4/1
4	1/7 of 28	0 -	2 -	7	½ 0 - 2 - 7/6
2	½	0 -	1 -	3	¾ 0 - 1 - 3
Anſwer *L.*		3 -	3 -	8	¼ 3 - 1 - 2

EXAMPLE 11.

103 lb at *L.* 8 - 17*s.* - 3*d.* ¼ *per* Cwt.

56	½	4 -	8 -	7	½ 4/2
28	½	2 -	4 -	3	¾ 1
16	1/7 of Cwt.	1 -	5 -	3	¾ 2 - 7/2
2	1/8	0 -	3 -	1	¾ 3 - 5 - 8/4
1	½	0 -	1 -	6	¾ 3 - 6 - 2
Anſwer *L.*		8 -	3 -	0	¼ 0 - 6 - 6

What

What hath been done before, with the Parts of a Cwt. the ſame may be done with the Parts of a Tun, or of a ℔ Troy, *&c.*

Examples of the Parts of a ℔ *Troy*, for Exerciſe may be as follow.

What is the Price of 6 Oz.; or 3 Oz, or 9 Oz, or 11 Oz; or 10 Oz, 15 dwts. 12 grs. or 11 Oz. 17 dwts. 17 grs. at *L.* *per L.*

In theſe Examples, I have left a Blank for the Money, to be fill'd up at the Diſcretion of the Maſter.

I ſhall now give you a few Examples, where you have ſome odd Weight, *&c.* annex'd to the given Quantity.

EXAMPLE I.

218 Cwt. 3 qrs. 24 ℔ at *L.* 5 - 15 *s.* - 7 *d.* ¼ *per* Cwt.

200		218		30(2
350(2				77(5
112|9(9	46 - 05 - 2	⅔		15|6(16
56	57 - 16 - 5	½		7
For the odd Weight	1156 - 9 - 2			
	5 - 11 - 6	-	3	
	1266 - 2 - 3	½	3	

3 qrs.

3 qrs. 24 lb at *L.* 5 - 15*s.* - 7*d.* $\frac{3}{4}$

2 qrs.	$\frac{1}{2}$		2 - 17 - 9	$\frac{3}{4}$	$\frac{4}{2}$
1	$\frac{1}{2}$		1 - 8 - 10	$\frac{3}{4}$	3
- 16 lb.	$\frac{1}{7}$	of Cwt.	- 16 - 6	$\frac{1}{4}$	-
- 8	$\frac{1}{2}$		- 8 - 3	-	2
			5 - 11 - 6	-	3

EXAMPLE 2.

126 Oz. 19dwts. 12grs. at *L.* - 5*s.* - 9*d.* $\frac{3}{4}$ *per* oz.

10dwts:	$\frac{1}{2}$	5*s.* - 9*d.* $\frac{3}{4}$	126			0
5	$\frac{1}{2}$	2 - 10 $\frac{3}{4}$ $\frac{4}{2}$	1 - 14 - 10	$\frac{1}{2}$	12)90(6	
4 $\frac{1}{5}$ of 20		1 - 5 $\frac{3}{4}$ 3	34 - 17 - 6		20)97(17	
12 grs.	$\frac{1}{8}$	1 - 1 $\frac{3}{4}$ 3 $\frac{1}{1}$	- 5 - 8		4	
		- - 1 $\frac{1}{2}$ 3 4 $\frac{3}{4}$	36 - 18 - 00	$\frac{1}{2}$	Answer	
		5 - 8 - - - 4				

EXAMPLE 3.

936 lb. Troy 11 oz. 12dwts. 13 grs. at *L.* 23 - 16*s.* - 4*d.* *per L.*

0		936		
20)70(0				
35	-	142 - 18 - 0		
		714 - 10 - 0		
	$\frac{1}{2}$	21435 - 00 - 0		

For the odd Weight 23 - 1 - 6 $\frac{1}{4}$, *&c.*

Answer *L.* 22315 - 9 - 6 $\frac{1}{4}$, *&c.*

In

In the following you have the Operation for the odd Weight.

11 Oz. 12 dwts. 13 grs. at *L.* 23-16*s.*-4*d.* *per* lb

6 Oz.	$\frac{1}{2}$	11-18- 2	
4	$\frac{1}{3}$ of 12	7-18- 9	$\frac{1}{4}\frac{2}{1}$
1	$\frac{1}{4}$	1-19- 8	$\frac{1}{4}$ 1
10 dwts.	$\frac{1}{2}$	--19-10- 2	
2	$\frac{1}{5}$	3-11	$\frac{1}{2}$ 1-$\frac{5}{3}$
12 grs.	$\frac{1}{4}$	--11	$\frac{1}{4}$ 1-4-$\frac{4}{2}$
1	$\frac{1}{12}$	-	$\frac{1}{4}$ 2-4-2-$\frac{12}{2}$
		23- 1--6	$\frac{1}{4}$ 1-2-0-2

In the preceding Multiplication, I got the ſecond Product by multiplying the firſt by 5, becauſe 30 is 5 times 6.

In this preceding Example, for the eaſier finding the Price of the odd Weight, I will give you the Operation of one of the Lines or Quotients in Words at length; for doing the ſame to all would be too tedious.

The Price, therefore, of the 12 Grains is obtain'd by taking a Quarter of the Money that the 2 dwts. come to, *viz.* 3*s.* 11*d.* $\frac{1}{2}$, 1 third Part of a Farthing, and 3 fifth Parts of a Third, *&c.* which Money divide by 4, ſaying, the Fours in 3*s.* is no times, which 3*s.* added to the 11d, make 47*d.* Then ſay, the Fours in 47 are 11 times, which 11 ſet down in the Place of Pence, and the 3*d.* that is over add it to the

next odd Money, which here is $\frac{1}{2}d$, and it makes 14 Farthings. Then divide, ſaying, the Fours in 14 are 3 times, which 3 ſet down in the Place of Farthings; and the 2 Farthings that remain, add them to the next odd Money, which here is Parts of a Farthing, and three of them make a Farthing; therefore the 2 remaining Farthings, together with one of thoſe odd third Parts, make 7 of thoſe Parts; which divide again, ſaying, the Fours in 7 is once, or 1 time, which 1 ſet down next to the Farthings; and the 3 Parts or Pieces that remain, add them to the next Money or Parts, which here is Parts of the laſt Money, and five of theſe Pieces, or Parts, make one of thoſe; therefore the three remaining Parts, or Pieces, together with 3 of thoſe odd fifth Parts, make 18 of thoſe Parts; which divide again, ſaying, the Fours in 18 are 4 times, which 4 ſet down next to the third Parts, and theſe two laſt remaining Parts, ſet down alſo in a new Place, for the next new Money, and over it place your Diviſor 4, which will be the Denomination of this new Money, or Parts. After the ſame Manner you may manage the other Lines or Quotients, adding them altogether.

I ſhall prove this laſt Example by the Rule of Three as follows.

lb	*L.*	*s*	*d.*	lb	Oz.	dwts.	grs.
If 1	is 23 -	16 -	4wt -	936 -	11 -	12 -	13
12	20			12			
12	476			11243			
20	12			20			
240	5716			224872			
24				24			
960				899501			
480				449744			
5760				5396941			
				5716			
				32381646			
				5396941			
				37778587			
				26984705			
							12
5760)308489147516 (53557146							
2048				210)44630)99(			
3209				22315			
3291							
4114							
827							
2515							
2116							

2116
4

5760)8464($\frac{1}{4}$

2704
3

5760)8112($\frac{1}{3}$

2352
5

5760)11760($\frac{2}{5}$

240
4

5760)960($\frac{0}{4}$

12

5760)11520($\frac{2}{12}$

00000

Anſ. *L.* 22315-1-6 $\frac{1}{4}\ \frac{1}{3}\ \frac{2}{5}\ \frac{0}{4}\ \frac{2}{12}$ the ſame as by Practice to the moſt minute Part.

EXAMPLE 4.

Tons.	Cwts.	Qrs.	lb.		*L.*	*s.*	*d.*	
379	- 17	- 3	- 23	at	11	- 12	- 7	*per* Ton.

379

12)900	104 - 13 - 3	12)10(10
2|0)177|5(15	814 - 0 - 10	2|0)8|0(0
88	3488 - 15 - 00	4

For the odd Weight 10 - 8 - 8 $\frac{1}{2}$, *&c.*

Anſwer *L.* 4417 - 17 - 9 $\frac{1}{2}$

17 Cwt.

17 Cwt.-3 qrs.-23 lb. at *L.* 11-12 *s.*- 7 *d. per* Ton.

10	$\frac{1}{2}$		5-16 - 3 $\frac{1}{2}$
5	$\frac{1}{2}$		2-18 - 1 $\frac{1}{4}$
2	$\frac{1}{10}$	of 1 Tun.	1- 3 - 8 - $\frac{10}{4}$
2 qrs.	$\frac{1}{4}$		-- 5 - 9 $\frac{1}{4}$ 1
1	$\frac{1}{2}$		2 -10 $\frac{1}{4}$ 5-$\frac{4}{2}$
14 lb	$\frac{1}{4}$	of 2 qrs.	1 - 5 $\frac{1}{4}$ 7-3
7	$\frac{1}{2}$		- - 8 $\frac{1}{2}$ 8-3-$\frac{4}{2}$
2	$\frac{1}{7}$	of 14	2 $\frac{1}{4}$ 9-2-2-$\frac{7}{6}$
			10- 8 - 9 $\frac{1}{2}$ 6-3-0-6

See the two laſt Queſtions, and ſuch like, work'd a ſhorter Way, in Caſe VIII. of Part II.

Note, When your given Quantity is of a different Name from the given Unit, you muſt make it of the ſame by Reduction. Then work as before.

EXAMPLE I.

Tons
79 -13 Cwt. at *L.* 1-5 *s.*-10 *d. per* Cwt.
20

for 1 *L.* 1593 Cwt. at, *&c.*

5 *s.*	$\frac{1}{4}$	398-	5
10 *d.*	$\frac{1}{10}$	39-	16-6

Anſw. *L.* 2031- 1-6

Ex-

EXAMPLE 2.

112 | 7587 ℔ at *L.* 3-11*s.*-9*d. per* Cwt.

67 Cwt.

672 | 67

867 | 25- 2 -3

784 | 215- 5 -0

28)83(2 qrs. 240- 7 -3

56

27 ℔

12)60(

2|0)10|5

5

2 qrs. 27 ℔. at *L.* 3-11*s.*- 9*d. per* Cwt.

2 qrs. $\frac{1}{2}$	1-15 -10 $\frac{1}{2}$
16 ℔ $\frac{1}{7}$ of Cwt.	--10 - 3
8 $\frac{1}{2}$	5 - 1 $\frac{1}{2}$
2 $\frac{1}{4}$	1 - 3 $\frac{1}{4}$ $\frac{4}{2}$
1 $\frac{1}{2}$	- - 7 $\frac{1}{2}$ 3
	240- 7 - 3
	243- 0 - 5 - 1 Answer

Ex. 3. 53 Ps. of Muzlin each 47 Yds. $\frac{1}{4}$ at 3*s.*-3*d.* $\frac{1}{4}$ *per* Yd.

53 Ps.

47 $\frac{1}{4}$

371

212

26 $\frac{1}{2}$

13 $\frac{1}{4}$

Yards 2530 $\frac{1}{4}$ at, &c.

12*d.* $\frac{1}{2}$ 1265

3*d.* $\frac{1}{4}$ 316-0-6

- $\frac{3}{4}$ $\frac{1}{4}$ 79-0- 1 $\frac{1}{2}$

For odd Meas. 1-0- 4 $\frac{1}{4}$

An. *L.* 419 | 1-0-11 $\frac{3}{4}$

2

S. 2---11 $\frac{3}{4}$

Or multiply thus

47 $\frac{1}{4}$

53

143 $\frac{1}{4}$

2387 $\frac{1}{2}$

Yards 2530 $\frac{1}{4}$

4)30(2

7

3--3 $\frac{3}{4}$

1--6 $\frac{3}{4}$ $\frac{4}{2}$

9 $\frac{1}{4}$ 3

2--4 $\frac{1}{4}$ 1 For odd Meas.

Rules

Rules for Tare, Trett, &c.

When in a Queſtion there is any of theſe Words, *viz. Groſs*, *Tare*, *Tret*, *Cloff*, and *Neat*.

Obſerve, that the Word *Groſs* means that ſuch Weight is the Weight of a Quantity of Goods, together with the Weight of the Hd. Cheſt, Bag, &c. that holds the ſaid Goods.

By *Tare* is meant, the Weight of the Hd. Cheſt, Bag, &c. that holds the Goods; and Merchants have Allowance for the ſame in a three-fold Reſpect.

Firſt, it may be known, or given in the Queſtion, by weighing the empty Hds. Cheſts, Bags, &c. before the Goods are put up, and ſo the Weight of them ſet down in the Invoice.

Secondly, It may be at 4 lb. 8 lb. 14 lb. 16 lb. &c. *per* Cwt. call'd alſo *per Cent*.

Thirdly, It may be at 100 lb. 59 lb. 16 lb. *per* Hd. Cheſt, Bag, &c.

When the Tare is given, ſubſtract it from the Groſs Weight; but if it be at ſo much *per* Cwt. find it either by the Rule of Three, or by taking ſuch aliquot Part or Parts of the Groſs Weight, as the Allowance is *per* Cwt.; but if it be at ſo much *per* Hd. &c. work it either by the Rule of Three, or multiply the Number of Hds. Cheſts, &c. by the Pounds Tare of one Hd. Cheſt, &c. Theſe are the common Ways; but there are other Methods which a little Practice will make very familiar to you.

Which

Which Tare, when ſubtracted from the Groſs Weight, if there be no other Allowance, finds the Neat Weight; but if there be an Allowance for Trett, *&c.* then the Remainder is call'd Subtle.

Trett is an Allowance given by the Merchant to the Shop-Keeper, of 4 ℔ for every 104 ℔, upon ſuch Goods wherein there is Waſte, Droſs, *&c.*

This may be found either by the Rule of Three, or by dividing the Subtle Weight by 26 (in a Place apart) becauſe 4 ℔ is the exact 26th Part of 104; which Trett, ſubtracted from the Subtle Weight, if there be no other Allowance, finds the Neat Weight; but if there be an Allowance for Cloff, then that Remainder is call'd ſecond Subtle, and the other Subtle may be called firſt Subtle.

Cloff is an Allowance of 2 ℔ for every 3 Cwt. allow'd to the Citizens of *London* for the Turns of the Scale, for the Draughts they give in ſelling out their Goods by Retale.

This may be found either by the Rule of Three, or by dividing (in a Place apart) the ſecond Subtle Weight, by 168; becauſe 2 ℔ is exactly the 168th of 336 ℔, *viz.* 3 Cwt., which ſubtract from the ſecond ſubtle Weight, and you have the Neat. For,

Neat is the Weight of the Goods when all the Allowances are deducted.

Ex-

EXAMPLE 1.

What's the Price of 93 Cwt. Groſs, Invoice Tare 4 Cwt., at *L.* 2-18*s.* *per* Cwt. Neat?

	Cwt.
2---18	93 Groſs
10	4 Tare
Two 29 Sh. Ps.	89 Neat at, *&c.*
	29
	801
	178
Anſwer *L.* 258 | 1	
2	
S. 2	

EXAMPLE 2.

217 Cwt. $\frac{3}{4}$ 19 ℔ Groſs, Tare 11 Cwt. $\frac{1}{4}$ 5 ℔ at (*L.* 1-14*s.*-8*d.* *per* Cwt. Neat.

Tare 11	$\frac{1}{4}$ 5	$\frac{1}{2}$ 14 at *L.* 1-14-8
Neat 206	$\frac{1}{2}$ 14	$\frac{1}{2}$ is $\frac{1}{2}$ --17-4
17		14 ℔ $\frac{1}{4}$ 4-4
1442		1- 1-8
206		10
8*d.* $\frac{1}{3}$ 68-1-4		2*s.* Ps. 10, *&c.*
10-1-8 For the odd Weight.		
A. *L.* 358 | 1-1-0		
2		
S. 3		

EXAMPLE 3.

1507 Cwt. ¼ 13 ℔. Groſs, Tare 45 Cwt. ½ 19 ℔ at *L.* 7-17*s.*-5*d.* ¼ *per* Cwt. Neat.

1507 ¼ 13 Groſs
45 ½ 19 Tare

1461 ½ 22 Neat at, *&c.*
78 ½

11688 *L.* 7 - 17
10227 10
730-1
4*d.* ⅓ 243-1 2*s.* Ps. 78 ½
1 ¼ 60-1-9
¼*d.* ¼ 15-0-5 ¼
For the odd Weight 54-1-7 ½, *&c.*

Anſwer *L.* 11506 | 2-1-9 ¾
2
S. 5 - 9 ¾

½ 22 ℔ at 7-17-5 ¼ *per* Cwt.

½ is ½ 3-18-8 ½ 4/2
14 ℔ ¼ --19-8 - 2-4/2
8 1/7 of 56 11-2 ¼ 3- 0 7/4

For the odd Weight *L.* 5- 9-7 ½ 3-2-4
10
2*s.* Ps. 54-15, *&c.*

Ex-

EXAMPLE 4.

783 Cwt. ¼ 15 ℔ Groſs, Tare 16 ℔ *per* Cwt. at *L.* 3-10*s. per* Cwt. Neat.

783 ¼ 15 Groſs
16 ⅐ 111 ¾ 18 ⅐ Tare. Rem. ⅐ inconſiderable
671 ¼ 25 Neat
3
2013
10 ½ 335-10
For the odd Weight 1-13-1 ½
Anſwer *L.* 2350-3-1 ½

¼ 25 ℔ at *L.* 3-10

¼ is ¼ 0-17-6*d.*
16 ⅐ --10--
8 ½ 5--
1 ⅛ --7 ½
For the odd Weight 1-13-1 ½

In the following Example you have various Methods of reducing Cwts, qrs. and ℔s into ℔s.

EXAMPLE 5.

958 Cwt. ¾ 17 ℔ Groſs, Tare 21 ℔ *per* Cent at 8*d. per* ℔ Neat.

958 ¾ 17
958
958
958
101 for odd Weight
107397 ℔ Groſs.

Or thus.
958 ¾ 17
11496
101
107397 Or

Or thus for Explanation of the two former.

958 ¾ 17
112

1916 } The ſame as the Number 958 ſet down at twice.
958
958
101

107397

Again

958 ¾ 17
112

11496 Product by 12

958 -- 101 -- 107397 | This Number 958 ſtanding upper-moſt, as before, 'tis plain when you multiply by 12 you muſt ſet two Figures out to the Right.

Or thus

958 ¾ 17
958
958
958
101

107397

Theſe are obvious enough of themſelves.

Or thus

958 ¾ 17
958
10538
101

107397

Or thus in one Line, multiplying by 12, and adding the back Figure, and taking in the odd 101 lb.

958 ¾ 17
112

107397

Or

Or thus the common Way, multiplying by 4 and by 28, taken in the odd Weight.

958 ¼ 17
4

3835
28

30697
7670

107397 lb Groſs

14 lb ⅛ 13424-⅝ } Parts inconſide-
7 ½ 6712-2 ½ } rable.

20136 lb Tare

8*d.* ⅓ 87261 lb Neat at 8*d. per L.*

Anſwer *L.* 2908 | 7
2

S. 14

EXAMPLE 6.

734 Hogſheads each 6 Cwt. ¼ 21 lb Groſs, Tare 91 lb *per* Hogſhead, Trett 4 lb *per* 104 lb, at *L.* 1-6*s. per* Cwt. Neat.

91 lb

91 ℔ Equal to $\frac{1}{4}$ 7 ℔. 6 $\frac{1}{4}$ 21 Groſs Wt. of 1 Hd.
0 $\frac{1}{4}$ 7 Tare of 1 Hd.

734 Hds. each 5 $\frac{1}{2}$ 14 Subtle.

5

3670
$\frac{1}{2}$ 367
14 ℔ $\frac{1}{4}$ 91 $\frac{1}{4}$

4 $\frac{1}{26}$ 4128 $\frac{1}{4}$ Subtle of 734 Hds.
158 $\frac{1}{4}$ 5 ℔ Trett

3969 $\frac{1}{4}$ 23 Neat at *L.* 1- 6*s.*
11907 For 6*s.*

For odd wt. 12-0-10 $\frac{0}{4}$ $\frac{2}{7}$

An. *L.* 5160 | 9-0-10 $\frac{0}{4}$ $\frac{2}{7}$
2

S. 18---10

$\frac{1}{2}$ is $\frac{1}{2}$ 0-13
$\frac{1}{4}$ $\frac{1}{2}$ 6-6
16 ℔ $\frac{1}{7}$ 3-8 $\frac{1}{2}$ $\frac{2}{7}$
7 $\frac{1}{4}$ 1-7 $\frac{1}{2}$

1-4-10 $\frac{0}{4}$ $\frac{2}{7}$

EXAMPLE 7.

Bought 7 Bags of Pepper Weight, and N°., *viz.*

Num.	Cwt	qrs.	lb.	
1	2	3	11	
2	2	2	27	
3	2	2	8	Groſs, Tare 4 ℔ *per* Bag,
4	2	3	5	Trett 4 ℔ *per* 104 ℔,
5	2	3	21	Cloff 2 ℔ *per* 3 Cwt. at
6	2	1	18	15*d.* *per* ℔ Neat.
7	3	0	13	
	19	1	19	19

19 ---- 1 ---- 19 Groſs Bags
--- ---- 1 ---- --- Tare 7
4
4 1/26 18 ---- 0 ---- 19 Subtle 28 lb Tare Eq. to 1/4 (Cwt.
00 ---- 1/2 ---- 22 Trett
2 1/168 18 ---- 1/4 ---- 25 Subtle
--- ---- 0/4 ---- 12 Cloff
18 ---- 1/4 ---- 13 Neat
4
73
28
597
146
2057 lb Neat at 15*d.*
12*d.* 1/2 1028-1
3*d.* 1/4 257-0-3
Anſ. *L.* 128 | 5-1-3
2
S. 11----3*d.*

Of certain Quantities of Goods, that may readily be caſt up by the Head.

I. To find the Price of the Hundred, Six-Score, or 120 to the Hundred, by knowing the Price of One, either in Pence, or Pence and Farthings.

Rule,

Rule, For every Penny in your Price reckon 10*s*, or an Angel; and for every odd Farthing reckon half a Crown.

The Reaſon is, becauſe the Number 120 is the Half of 240, the Pence in 1 *L*; conſequently if the Price of one any Thing be 1*d*. the Price of the 120 will be 120 Pence, equal to 10*s*. equal to one Angel; from whence its plain, that the Price of this Quantity of Goods will be as many Angels as is the Value of one in Pence, *&c*. which Angels halved, or divided by 2, make Pounds.

EXAMPLE 1. If I ſell 120 Sheep-Skins, at 14 Pence a Piece, what muſt I receive? Anſwer, 14 Angels, or *L*. 7.

Ex. 2 What's the Price of 120 Deal-Boards, at 13 Pence *per* Deal? Anſwer, 13 Angels, or *L*. 6. 10*s*.

Ex. 3. If 1 Ell of Canvas, or any Thing elſe, coſts 7*d*. ½ What will 120 coſt? Anſwer, 7 Angels, and two Half-Crowns, that is, *L*. 3-15*s*.

On the Contrary, Knowing the Price of the Hundred, or 120, to find the Price of one.

Rule, For every 10*s*. or Angel in the Price, reckon 1 Penny, and for the odd Money, reckon a Farthing for every Half-Crown; and ſo in Proportion for the reſt.

Ex. 1. Sheep-Skins at *L*. 5 the Hundred, *viz*. 120 What is that a Piece? Anſwer, 10*d*; becauſe in *L*. 5 there is 10 Angels. Ex-

Ex. 2. At *L.* 3-17-6 the Hundred of 120, What doth one coſt? Anſwer, 7*d.* $\frac{1}{4}$; that is, 7 Pence for the 7 Angels, and $\frac{1}{4}$*d.* for the 7*s.*-6*d.*

Ex. 3. At *L.* 14-13-10 for 120, What is the Price of one? Anſwer, 29*d.* $\frac{1}{4}$ $\frac{6}{30}$, that is, 2*s.*-5*d.* $\frac{1}{4}$ $\frac{8}{15}$; the 29*d.* is for the 29 Angels, and the $\frac{1}{4}$*d.* is for the Half-Crown in the Remaining 3*s.*-10*d.* and the $\frac{6}{30}$ths of a Farthing, equal to $\frac{8}{15}$ is for the remaining 16*d.* it being $\frac{6}{30}$th Parts of another Half-Crown.

From what hath been already advanc'd it follows, that many particular Quantities of Cwts. Yards, Ells, *&c.* may very readily be eſtimated; as for Example, the Quantity 240, becauſe it is the Number of Pence which make a Pound, conſequently will coſt as many Pounds, as the Unit ſhall coſt Pence, and if the Price be Pence and Farthings, for every Farthing reckon a Crown; as for Inſtance.

What's the Price of 240 Yards at 1*d.* $\frac{1}{4}$ *per* Yd.? Anſwer, *L.* 1 $\frac{1}{4}$ that is *L.* 1 and a Crown.

Again, ſuppoſe the Quantity be twice 240, *viz.* 480 Yards, Ells, *&c.* at 7*d.* $\frac{1}{4}$ *per* Ell. the Anſwer will be *L.* 15-10*s*, that is, reckoning every Penny in the Price as a Pound, and every Farthing a Crown, as is done before when the Quantity was 240; but this being 480, *viz.* twice 240, it is plain the Anſwer will be twice *L.* 7-15*s*, namely, *L.* 15-10*s.* as before.

Again, If the Quantity be once 240, and the Half 120, *viz.* in all 360lb, at 5*d.* *per L*, the

Anſwer will be *L.* 7-10*s.* to wit, one 5 *L*, and the half of *L.* 5.

Again, If the Quantity be an aliquot Part of 240, to wit, 80 a third Part, then take a third Part of the ſuppoſed *Ls.* and Crowns; as for Example; What's the Price of 80 ℔ of Tobacco, at 9*d.* ¼ *per L.* Anſwer, ⅓ of 9*l.*-15*s*, that is, *L.* 3-5*s.*

After the ſame Manner you may manage many other Quantities that are an aliquot Part or Parts of 240, or that contain it twice, thrice, *&c.* or once, twice, *&c.* and a Part or Parts.

II. To find the Price of the Cwt., *viz.* 112 ℔; or 112 of any other Thing, by having the Price of one, either in Pence, or Pence and Farthings.

Rule, for every Penny in your Price, reckon 10*s.* or an Angel; and for every odd Farthing Half a Crown, abating 8 Pence for every Angel, and 2 Pence for every odd Half-Crown, and for 14 Angels abate almoſt an Angel, *viz.* 9*s.*-4*d.*

Or thus: For every Half-penny in your Price reckon a Crown, abating as many Groats.

Or thus: For every Farthing in your Price reckon twice as many Shillings, and once as many Groats.

Ex. 1. Braſs, at 9*d. per* ℔, What is it the Cwt.? Anſwer, *L.* 4-4*s*, that is, 9 Angels, equal to *L.* 4-10 abating 9 Eight-Pences, or 6*s.*

Ex.

Ex. 2. Lead, at 7 Farthings the ℔, What is that a Cwt.? Anſwer, 16*s*.-4*d*; that is, 7 Half-Crowns, or 17*s*.-6*d*, abating 7 Two-Pences.

Ex. 3. Goods, at 7*d*. ¼ *per* ℔. What is that for 112 ℔? Anſwer, *L*. 3-12-4; for that is 7 Angels, and 3 Half-Crowns, abating 7 Eight-Pences, and three Two-Pences, that is, 5*s*.-2*d*.

On the Contrary, by having the Price of the Cwt, or 112 of any Thing elſe, to find the Price of 1 ℔, or Thing.

Rule. For every Angel in the Price, reckon a Penny, and ſo in Proportion for the odd Money, which will be ſomething too little, eſpecially if the Price be large; to make up which Deficiency obſerve that you reckon 8 Pence for every Angel, which Eight-Pences, if they amount to 9*s*.-4*d*, reckon another Penny to the Price. In like Manner, if they make half 9*s*.-4*d*, *viz*. 4*s*.-8*d*. reckon a Half-penny more: And if 2*s*.-4*d*. reckon a Farthing, by this Means you'll have the Anſwer exactly.

Or thus: Reckon a Half-penny for every Crown; and to make up the Deficiency reckon a Groat for every Crown; and as oft as theſe Groats amount to 4*s*.-8*d*. reckon another Half-penny.

EXAMPLE 1. Cheeſe, at 30*s*. *per* Cwt. What is that a Pound? Anſwer, 3*d*. ¼ almoſt; for in 30*s*. there is 3 Angels; then reckoning a Penny

for every Angel it makes 3*d.* and alſo for the 3 Angels reckon 3 Eight-pences, which make 2*s.* that is very near 2*s.*-4*d.* for which add near a Farthing to the 3*d.* and you have 3*d.* $\frac{1}{4}$ almoſt; but if you had rather have an exact Anſwer, it is 3*d.* $\frac{4}{112}$, 112 Pence being the Price of a Cwt. at 1*d. per* ℔. From whence it is plain that 96 ℔ of the Cheeſe ſtands you in 3*d.* $\frac{1}{4}$ the Pound, and the other 16 ℔ ſtands you in but 3*d.* the ℔.

Note, For every 14 Angels in the Price of the Cwt. add another Penny, becauſe 14 Eight-Pences are 112 Pence, or 9*s.*-4*d.*

Ex. 2. Tobacco, at *L.* 7-12-6 *per* Cwt. What is it a ℔? Anſwer, 16*d.* $\frac{1}{4}$ $\frac{10}{28}$ exactly; thus reckoned: For the 15 Angels, 15*d.* and 1*d.* more for 14 Angels, which together make 16*d.* and $\frac{1}{4}$*d.* for the Half-Crown, and 10 Parts more for the odd 10*d.* thus reckoned, *viz.* 8*d.* for the 15th Angel, and 2*d.* for the odd Half-Crown.

Ex. 3. 112 of any Sort of Goods at *L.* 22-18-10, What is it for 1? Anſwer, 49*d.* $\frac{0}{4}$ $\frac{18}{28}$, equal to 4*s.*-1*d. &c.* reckoned as before.

III. To find the Price of the ſmall or common Hundred, *viz.* Five-ſcore to the 100, by having the Price of One, either in Pence, or Pence and Farthings.

Rule, For every Penny in your Price, reckon 10*s.* or an Angel, abating 20*d.* out of every Angel, or (which is the ſame) 5 Shillings out

out of every 3 Angels or 30*s*; alſo abate 5*d*. for every odd Half-Crown, and ſo in Proportion.

Or thus: For every Farthing in the Price, reckon twice as many Shillings, and once as many Pence.

Or thus: Multiply your Price by 5, and divide the Product by 12, then value the Quotient thus; the Figure or Figures that ſtands in the Place of Pence, reckon Pounds, and that which is in the Farthing's Place, reckon ſo many Crowns; and if there be any Remainder, it is ſo many Times Five-pence, or as many Groats, and as many Pence.

Note, If the Price be Shillings, Pence, and Farthings, multiply by 5, and the Product is the Anſwer; thus, the Shillings muſt be reckoned Pounds, every Penny 20*d*. or $\frac{1}{12}$ of a *L*, and the Farthings muſt be reckoned Five-pences, or Groats and Pence.

EXAMPLE 1. At 10*d*. $\frac{1}{2}$ the Ell, What will 100 coſt? Anſwer, by Rule 1, *L*. 4-7-6. that is 10 Angels and 1 Crown, abating 3 Crowns for 9 Angels, and 20*d*. for the other Angel, and 10*d*. for the 2 Farthings, which together make Half a Crown more.

Ex. 2. What's the Price of a 100, when one coſts 5*d*. $\frac{3}{4}$? Anſwered thus, by Rule 2. 5*d*. $\frac{3}{4}$ is 23 Farthings, and twice 23*s*. is 46*s*, and once 23*d*. is 1*s*.-11*d*. which together make *L*. 2-7-11.

Ex. 3. At 13*d*. $\frac{1}{4}$ the ſingle Thing, What muſt I give for a 100? Anſwered thus, by Rule

3.

3. 13*d*. ¼ multiplied by 5, produceth 66*d*. ¼, This divided by 12, quotes 5*d*. ½. and one remaining, which Quotient reckoned, according to the Rule, is *L*. 5-10-5.

Ex. 4. At 3*s*.-7*d*. ¼ *per* Yard, What muſt be given for 100? Anſwered, by Rule 4: 3*s*.-7*d*. ¼ multiplied by 5, produceth 18*s*.-2*d*. ¼ which reckoned, according to the Rule, is *L*. 18-4-7.

On the contrary knowing the Price of the 100 or Five-ſcore, to find the Price of One.

Rule 1. For every Penny in your Price, reckon an Angel, which will be ſomething too little; to make up which Deficiency, reckon 20*d*. for every Angel, or 1*d*. more for every 5 Angels; becauſe 5 Times 20*d*. is 100*d*. equal to 8*s*.-4*d*. alſo for 6*s*.-3*d*. reckon ¼*d*. and for 4*s*.-2*d*. reckon an Half-penny, and for 2*s*.-1*d*. reckon a Farthing, *&c*. This gives you the Price exactly.

Or, 2dly, Thus: Multiply the Price of the 100 by 12, and divide the Product by 5, which gives you the Price of one ſingle Thing, reckoning the Pounds of the Quotient Pence, and every 5 Shillings or 60 Pence for another Farthing, *&c*.

EXAMPLE 1. If 100 Gallons are valued at *L*. 13-13-7. What is that *per* Gallon? Anſwered thus, by Rule 1. Becauſe in the Price there is 27 Angels, I reckon 27*d*. Again, becauſe in 27 Angels there is 5 Times 5 Angels, I reckon 5*d*. more, which together make 32*d*. Again, for the other two Angels above 25, I reckon twice 20*d*. *viz*. 3*s*.-4*d*. which with the odd 3*s*.-7*d*. more than the 27 Angels makes 6*s*.-11*d*.

for

for which I reckon $\frac{1}{4}d.$ more, becauſe it exceeds 6*s.*-3*d.* by 8*d.* which 8*d.* is a Fraction of another Farthing, *viz.* $\frac{2}{2\,5}$ Parts; ſo that the Price of one Gallon is 32*d.* $\frac{1}{4}$ $\frac{2}{2\,5}$.

Ex. 2. What's the Price of one Yard, *&c.* when the 100 Yards, *&c.* coſt *L.* 14-17-10 $\frac{1}{4}$? Anſwered thus, by Rule 2. The Price of the 100 Yards, multiplied by 12, produceth *L.* 178-14-9. This divided by 5, maketh *L.* 35-14-11 $\frac{2}{5}$ which reckoned by the Rule is 35*d.* $\frac{1}{4}$ very near.

IV. By having the Price of one ſingle Pair, or Thing, to find the Price of the Dozen. Or by the Price of the Dozen, to find the Price of the ſmall Groſs, of twelve Dozen, *viz.* 144 Things, or Pairs. Or by the Price of the ſmall Groſs, to find the Price of the great Groſs, *viz.* 12 ſmall Groſs, or 144 Dozens.

The Proportion in all theſe being as 1 to 12; therefore the Rule is, the Price being Pence and Farthings, for every Penny reckon a Shilling, and for every Farthing 3 Pence.

EXAMPLE 1. Stockings, *&c.* at 22*d.* *per* Pair, What's the Price of a Dozen Pair? Anſwer, as many Shillings as Pence, viz. 22*s.*

Ex. 2 Toys, *&c.* at 5*d.* $\frac{1}{4}$ *per* Dozen, What is that the ſmall Groſs? Anſwer, 5*s.*-3*d.*

Ex. 3. At 3*s.*-7*d.* $\frac{1}{4}$ the ſmall Groſs, What muſt I give for the great Groſs? Anſwer, as many Shillings as Pence, *&c.* viz. 43*s.*-9.

V. By

V. By having the Price of the ſingle Pair or Thing, to find the Worth of the ſmall Groſs. Or, by the Price of the Dozen, to find the Price of the great Groſs.

The Proportion here being as 1 to 144; therefore the Rule is, The Price being Pence, for every Penny reckon 12*s.* or an Angel, and twice as many Shillings; but when the Price is ſmall, for every Farthing reckon 3*s.*

EXAMPLE 1. Buttons, at 7*d. per* Dozen, What is the Price of the great Groſs? Anſwer, 7 Angels and twice 7*s. viz.* 14*s.* in all *L.* 4-4*s.*

Ex. 2. Sciſſors, at 2*d.* $\frac{3}{4}$ the Pair, What is the Price of the ſmall Groſs? Anſwer, 2*d.* $\frac{3}{4}$ being 11 Farthings, and 11 Times 3*s.* is 33*s.* or *L.* 1-13*s.*

VI. Knowing the Price of the Tun of Wine, *&c.* of 252 Gallons, to know the Price of one Gallon.

Rule, From as many Pounds as the Tun coſts, abate as many Shillings, and the remaining Pounds reckoned as Pence, and every 5 Shillings of the odd Shillings a Farthing., will be the Price of the Gallon, exact enough for any common Buſineſs.

Or thus more exactly; from as many Pounds as the Tun coſts, abate as many Shillings leſs a Shilling, when the Price is 21 Pounds, and 2*s.* when 42 Pounds, 3*s.* when 63 Pounds, and

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ſo in Proportion for any leſſer or larger Price. Or thus; Reckon the Pounds of the Price as Pence, the odd Crowns for Farthings; then for 21*d.* abate 1*d.* for 42*d.* abate 2*d.* and for 63*d.* abate 3*d.* and ſo in Proportion. The Pence and Farthings remaining will be the Price of a Gallon exactly.

EXAMPLE. Wine, *&c.* at *L.* 56 a Tun, What is it a Gallon? I anſwer, *L.* 56 abating 56*s*, *viz.* *L.* 2-16*s.* makes *L.* 53-4*s.* which reckoned as by Rule is 53*d.* $\frac{1}{4}$ almoſt.

Again; The 56*l.* abating 56 Shillings leſs 2*s*, becauſe in 56 there is twice 21 there remains *L.* 53-06*s.* which reckoned as before, is 53*d.* $\frac{1}{4}$ and ſomething more.

Again; Reckoning the 56*l.* 56*d.* abating 2*d.* $\frac{1}{2}$ $\frac{4}{21}$ for twice 21 and Half of 21 and ſomewhat more, the Remainder is 53*d.* $\frac{1}{4}$ $\frac{7}{21}$ for the Gallon exactly.

On the contrary, knowing the Price of the Gallon to find the Price of the Tun of 252 Gallons.

Rule, Reckon every Penny of the Price a Guinea, and every odd Farthing 5*s.*-3*d.* you have the Anſwer in Guineas, *&c.*

EXAMPLE 1. If one Gallon, Ell, Yard, *&c.* coſts 3*s.*-2*d.* What will 252 Gallons, Ells, Yards, *&c.* coſt? Anſwer, 3*s.*-2*d.* being 38*d*, which reckon'd as Guineas, make 38 Guineas equal to *L.* 39-18*s.*

Ex. 2. At 10*d.* $\frac{1}{4}$ *per* Gallon, What is that the Tun of 252 Gallons? Anſwer, 10 Guineas for the 10*d*, and three Times 5*s.*-3*d. viz.* 15*s.*-9*d.*

9*d.* for the odd 3 Farthings, which together make *L.* 11-5-9.

VII. To find the Price of a 1000, having the Price of One.

Rule, For as many Farthings as one coſts, reckon as many Pounds, and Ten-pences; Or, as many Pounds, Six-pences, and Groats.

EXAMPLE 1. What's the Price of 1000 Lemmons at 3 Farthings each? Anſwer, *L.* 3 and 3 Ten-pences, or 30*d.* In all *L.* 3-2-6.

Ex. 2. At 3*d.* $\frac{1}{4}$ *per* Ell, ℔, Yard, *&c.* What will 1000 Ells, ℔s, Yards, *&c.* coſt? Anſwer, 3*d.* $\frac{1}{4}$ being 15 Farthings, the Amount is *L.* 15, and 15 Six-pences, and 15 Groats. In all *L.* 15-12-6.

On the contrary, by having the Price of the 1000 to know the Price of One.

Rule, For every Pound reckon a Farthing, abating one Farthing for every 25 Pounds, and ſo in Proportion for any leſſer or larger Sum.

EXAMPLE 1. At *L.* 17 the Thouſand, What is the Price of one ſingle Thing? Anſwer, 17 Farthings. Or 4*d.* $\frac{1}{4}$ almoſt. Or exactly 4*d.* $\frac{0}{4}\ \frac{8}{25}$ Parts.

Ex. 2. At *L.* 42 the Thouſand, What coſts One? Anſwer, 42 Farthings, abating 1 Farthing for *L* 25, and ſomething more for the other *L.* 17. So that the true Anſwer is 10*d.* $\frac{0}{4}\ \frac{8}{25}$ Parts.

VIII. By

VIII. By knowing your Weekly Expences, to find what they amount to in a Year, *viz.* 52 Weeks.

Rule. For as many Farthings as you ſpend in a Week, reckon as many Shillings, and as many Pence.

EXAMPLE 1. If I ſpend 10*d.* $\frac{3}{4}$ *per* Week, What is it in the Year? Anſwer, 10*d.* $\frac{3}{4}$ being 43 Farthings, theſe, reckoned according to the Rule, make 43 Shillings, and 43 Pence. In all *L.* 2-6-7.

IX. By knowing what your Expences are *per* Day, to find what they come to in a Year.

Rule, For every Penny you ſpend reckon one Pound, one Angel, one Groat, and one Penny; and for every odd Farthing, one Crown, one Half-Crown, one Penny, and one Farthing.

The Reaſon of this Rule is, if the daily Expences be a Penny, then the Number of Pence ſpent will be as many as are the Days in a Year, *viz.* 365*d.* which Pence are equal to one Pound, one Angel, one Groat, and one Penny; for in one Pound are 240*d.*, in an Angel 120*d*, and in a Groat and a Penny are 5*d.* which together make 365*d.*

EXAMPLE 1. What does that Perſon ſpend in a Year who allows himſelf to ſpend 14*d.* each Day? Anſwer, 14 Pounds, 14 Angels, 14 Groats, and 14 Pence. In all *L.* 21-5-10.

Ex. 2. At 17*d.* ¼ *per* Day, Yard, Ell, *&c.* What is it for 365 Days, Yards, Ells, *&c?* Anſwer, 17 Pounds, 17 Angels, 17 Groats, and 17 Pence, which make *L.* 25-17-1. and for the odd 3 Farthings 3 Crowns, 3 Half-Crowns, 3 Pence and 3 Farthings. This makes *L.* 1-2-9 ¾. In all *L.* 26-19-10 ¾.

X. By knowing how many Pounds your yearly Expence or Income is, to find what it comes to a Day.

Rule. Divide your Pounds by 3, and reckon the Quotient as ſo many Two-Pences; and if there ſhould any Thing remain, for each Unit add 3 Farthings more to the Two-Pences.

Or rather value the Remainder as it really is, *viz.* ⅓ or ⅔ Parts of 2*d.* For the ⅓ Part of 2*d.* is 2 Farthings and ⅔*d.* Parts of another, and the ⅔*d.* Parts of 2*d.* is twice 2 Farthings ⅔*ds. viz.* 5 Farthings ⅓*d.* Part: Therefore add but 2 Farthings to the Two-Pences when the Remainder is 1; and add 5 Farthings when there remains 2.

Note, If the Number of Pounds are 72 (to wit, the Number of the Tranſlators of the Bible in *Ptolomy*'s Time) abate one Pound; then divide by 3 as before, and thus abate in Proportion, for a greater or a leſſer Sum; to wit, for 36 Pounds abate 10*s*, *&c.*

This Rule being the Converſe of the former, The Reaſon for the Operation will be much the ſame; In that for every Penny ſpent in a Day, were

were reckoned, one Pound, one Angel, *&c.* equal to 365*d.* conſequently for 2*d.* the Day, twice 365*d. viz.* 730*d.* equal to *L.* 3-0-10; therefore taking this (*vice verſa*, or) the contrary Way, that *L.* 3-0-10 Income, or ſpent in a Year, will be 2*d.* a Day, makes it plain that *L.* 3-0-10 or rather (by omitting the odd 10*d.*) *L.* 3 becomes a Diviſor to find how many Two-pences are the Income, Expences, or Charges, for one Day; ſo that dividing by *L.* 3 inſtead of *L.* 3-0-10. is the Reaſon alſo for abating 1 in 72, *&c.*

EXAMPLE 1. What does it ſtand that Perſon in a Day, that pays *L.* 18 *per Annum* for his Horſe ſtanding at the Livery-Stable? Anſwer, 12*d.* for dividing 18 by 3 the Quotient is 6 Two-pences, or 12*d.*

Ex. 2. Suppoſe I have *L.* 50 *per Annum*, What is that a Day? Anſwer, 2*s.*-9*d.* $\frac{1}{2}$; for dividing 50 by 3 the Quotient is 16 Two-pences, or 8 Groats, and for the 2 remaining reckon twice three Farthings; Or more exactly 1*d.* $\frac{1}{4}$; ſo that the Anſwer is more nearly 2*s.*-9*d.* $\frac{1}{4}$.

Ex. 3. At *L.* 162 *per Annum*, or *per* Ell, *&c.* What is it *per* Day, or Ell, *&c?* Anſwer, 8*s.*-10*d.* $\frac{1}{2}$. Here becauſe 162 is above twice 72, abate *L.* 2 and the Remainder 160 divide by 3, the Quotient is 53 Two-pences, and $\frac{1}{3}$*d.* which, halved, make 26 Groats and Two-pence; which with $\frac{1}{2}$*d.* for the $\frac{1}{3}$*d.* remaining, makes 8*s.*-10*d.* $\frac{1}{2}$, as before.

The End of the firſt PART.

PART the SECOND.

BEING

Some ſmall Remarks by Way of Proof to the Queſtions of Part I. &c.

CASE I.

THE Price of the Unit being even Shillings, as in Caſe I. of Part I.

Rule. Multiply the given Quantity by half the Price; double the Unit's Figure of the Product for Shillings, the reſt are Pounds. As by working Example the 6th of Caſe I. Part I. will appear,

3856 Qrs. at 12*s.*
6

Anſwer *L.* 2313-12*s.* as before.

Example the 7th work'd again here by placing the Diviſor 10 at the left Hand of the the Dividend, as uſual, it being ſomething plainer for a young Beginner.

Ex. 7. 951 Sheep at 14*s*.

7

1|0)665|7(
L. |2

14*s*.

The Examples of Caſe I. Part I. may alſo be proved by finding the given Quantity.

Rule. If there be no odd Shillings with the given Pounds, annex a Cypher to the Pounds; but if there be odd Shillings, annex as many 2*s*. Pieces as are in the odd Shillings; then divide by half the Price.

The following is the Proof of the 8th Example, *&c.* of Caſe I. Part I. by this Rule.

How many Dozens can I have for *L.* 5404 -16*s*. at 16*s*. *per* Dozen?

half Price 8)54048 the 8 two Sh. Ps. annex'd,

6756 Dozens for Proof.

Another Example, not in the firſt Part.

How many Cwts, with odd Qrs, lb, Oz, and Drams can I buy for 6821, at 12*s*. *per* Cwt.?

6)6820

	lb	Oz.	Dr.
Anſ. Cwt. 1136 ½	18 -	10 -	10 4/6

The Examples of Caſe I. and II. of Part I. may be extended to Pounds, and Shillings, by only annexing as many 2*s*. Ps. to the Pounds

as

as are contained in the odd Shillings, and multiplying the given Quantity thereby.

Ex. 1. 675 Tons at *L.* 2-12*s.* *per* Ton

26

4050
1350

1755|0 Anſwer

Fodders

Ex. 2. 797 at *L.* 13-17*s.* *per* Fod.

138 ½

6376
2391
797
398 ½

Anſwer *L.* 1103|4 ½

2

9*s.*

CASE II. The Price of the Unit being odd Shillings, from 3 to 25, as in Part I. Caſe II. to perform them at one Operation.

Rule. Multiply the given Quantity by the Number of Two-Shilling Pieces; and for the odd Shilling that's over, being the Half of another Two-Shilling Piece, when you multiply take in Half of the ſaid given Quantity. This may eaſily be done by obſerving that if the

the Figure towards the left Hand of the Unit's Figure, or any other, be odd; that then One muſt be taken from the ſaid odd Figure, and for it put Ten to the Figure that ſtands at the right Hand of that odd Figure, which Number halved, and that half taken in when you multiply, remembering alſo to ſet down an odd Half or Shilling when the Unit's Figure is odd; but if the Figure towards the left Hand of any other be even, then only take in Half the Figure that was multiplied; thus continue multiplying and taking in Half the Figure multiplyed, being encreas'd by Ten, as Occaſion requires, till the Operation is finiſh'd. The Product is the Anſwer in Two-Shilling-Pieces, which you may reduce into Pounds by Inſpection, or dividing by Ten, *viz.* cutting off the Figure in the Unit's Place, and doubling it for Shillings.

EXAMPLE 1. 2648 Gallons at 7*s.*

$3\frac{1}{2}$

Anſwer *L.* 926 | 8
2

S. 16

The Figures being all even, as above, the Operation is very eaſy; in like Manner, the Figures being all odd, or ſome even and ſome odd, a little Practice will make them very familiar.

The following Examples are the 8th and 9th of Caſe II. Part I.

Ex. 8. 7197 Quarters at 17*s.*

8 ½

Anſwer *L.* 6117 | 4 ½
2

S. 9

Ex. 9. 3011 Bags at 19*s.*

9 ½

Anſwer *L.* 2860 | 4 ½
2

S. 9

CASE III. The Price of one Yard, *&c.* being an aliquot Part of 2*s.* as in Caſe III. Part I.

Example 4th of Caſe III. Part I. work'd with ſome Diverſity by Way of Proof.

Ex. 4. 4277 ℔ of Sugar at 4*d.*

4*d.* ⅙ 71 | 2 ¾ 2 Anſw. 71*l.*-5*s.*-8*d.*
2

S. 5-8*d.*

In the Example above, the Remaining 5 Two Shilling Pieces I turn'd into Sixpences, theſe making 20 I divide by my Diviſor 6, the Quotient

tient is 3 Sixpences, which you may ſet down as above, or otherwiſe at your Pleaſure; the remaining 2 Sixpences I turn into Pence, theſe making 12*d.* I again divide by 6, the Quotient is 2*d.* to be ſet down; I then divide by 10, cutting off the Figure in the Unit's Place, and doubling it I take in one odd Shilling contain'd in the $\frac{1}{4}$ of a Two-Shilling Piece, and there is $\frac{1}{4}$ or 6*d.* over; which with the odd 2*d.* makes 8*d.* After this Manner may the reſt of the Queſtions of this Caſe, and of the three following, be perform'd, by keeping the Money in the Denominations of Two-Shilling Pieces, Sixpences, Pence, and Farthings, or in the Denominations as they are in the firſt Part; but this as every one pleaſes.

CASE IV. Being as before in Part I. Caſe IV.

All the Queſtions of this Caſe, and others in Part I. may either be prov'd by the Rule of Three, or taking the Parts different Ways; or by the common Methods of Practice now in Uſe.

Example 6th of Part I. Caſe IV. work'd by taking the Parts after a different Manner.

Ex. 6. 3871 Ounces at 19*d.*

8*d.* $\frac{1}{3}$	1290 $\frac{1}{4}$ 2
8 $\frac{1}{3}$	1290 $\frac{1}{4}$ 2
3*d.* $\frac{1}{8}$ of 2*s.*	483 $\frac{3}{4}$ 3
Anſwer *L.*	306 | 4 $\frac{1}{2}$ 1 as before
	| 2
	S. 9---1*d.*

CASE V. The Price of the Integer being as before in Part I. Caſe V.

For a Proof of theſe either work as in the laſt Caſe: Or the Price being Pence and Farthings, under 12 Pence; or Pence without odd Farthings, as in the laſt Caſe.

Rule, Divide the Quantity given by 12, and this Quotient by 20, this finds the Price of your Goods at 1*d. per* Yard, Ell, *&c.* then multiply this Money by the Number of Pence, and for the odd Farthings take a Part, or Parts out of the Money that the Goods come to at 1*d.* and add altogether.

Example 10th of Caſe V. Part. I. work'd after this Manner.

Ex. 10. 793 ℔ of Tobacco at 9*d.* ¼

12)793(1
2|0)6|6

3---6-1 Price at 1*d. per* ℔

9

29 - 14-9 Price at 9*d.*
¼*d.* ¼ 0 - 16-6 ¼ Pr. at ¼*d.*

30 - 11-3 ¼ Anſ. at 9*d.* ¼

Ex. 1. Of the ſame 5th Caſe, work'd by the Principle of a *L.*

Ex.

Ex. 1. 5411 Yards at 1*d.* ¼
If the Price was 1 *L.* 5411 *L.*

2*s.*-6*d* ⅛	676- 7-6
5 ⅙	112-14-7
1 ¼ ¼	28- 3-7 ¼ Anſwer

This, and Examples 2, 12, 17, 18, 19, 20, 22, 23, are hinted at in Caſe V. of Part I. to be work'd after this Manner by ſuppoſing the Price to be 1 *L.*

CASE VI. The Price of the Unit being Shillings, with Pence or Farthings; or Shillings, Pence and Farthings.

All the Examples of this Caſe in Part I. may be prov'd as hath been already obſerv'd; or by multiplying the Price by the given Quantity, as is done in Caſe VII. Part I.

Example 1. of Caſe ſixth work'd by multiplying the Price by the Quantity.

Ex. 1.

4)20(
12)25(1
20)17[1]2(12
8

173 Stone at 2*s.*- 5*d.* ½

200(
550(10
245(5
12

173

7- 4 ½
8-12- 1
12- 5-10

Anſwer as before 21- 5- 3 ½

CASE

CASE VII. The Price of the Integer being, Pounds, Shillings, Pence, and Farthings, *&c.*

The Examples of this Caſe may be prov'd, by working the Queſtion various Ways.

In Queſtions where the Quantity is ſmall, as not above 12, and alſo when the Quantity is equal to any Product in the multiplication Table.

Rule. Divide the Money the Goods come to by the Quantity if under 13, but if above, then by one of the Numbers in the Table, and this Quotient by the other; this laſt Quotient will be the Price of the Unit if the Work is right.

Example 17, Page 55, prov'd as follows;

If 1000 Bales coſt 42829*l.*-3*s.*-4*d.* What is the Price of one?

1|000)42|829-3-4
l. 20

S. 17|583
12

7|000

The Examples of this Caſe, when the Quantity exceeds 12, may alſo be prov'd by the Rule following.

Rule.

Rule. When the Quantity given conſiſts of two Figures, or Places, multiply the Price by 10; and this Product by the Figure in the Tens Place of the given Quantity. Laſtly, multiply the given Price by the Figure in the Unit's Place of the given Quantity, and place the Product in order under the laſt; then add both together for the Anſwer.

But if the Quantity given conſiſts of three Figures, multiply the given Price by 10, and this Product by 10, and this by the Figure in the Hundred's Place of the given Quantity, then the Money that is got by multiplying by 10 the firſt Time, multiply by the Figure, that ſtands in the Ten's Place of the given Quantity, and place it orderly under the laſt Product. Laſtly, multiply the given Price by the Figure in the Unit's Place of the Quantity given, placing the Product under the laſt, then adding theſe three laſt Products together, you have the Anſwer.

Again. If the Quantity given conſiſts of four Figures, five, *&c.* multiply the given Price by 10 ſucceſſively as many Times, except one, as the given Quantity conſiſts of Figures, then multiply this laſt Product of multiplying by 10, by the Figure in the higheſt Place of the given Quantity, and the laſt Product but one of multiplying by 10, multiply by the next inferior Figure of the given Quantity, and place this Product orderly under the laſt; thus continue multiplying the ſeveral Products obtained, by multiplying with 10, till you come to multiply the given Price it ſelf, by the Figure in the Unit's Place of the given Quantity,

tity, then add these several last Products together, and you have done.

Ex. 23. 362 Tuns at *L.* 15-17*s.*-07 $\frac{3}{8}$

10

Price of 10. 158-16 - 1 $\frac{6}{8}$

10

Price of 100. 1588-01 - 5 $\frac{4}{8}$

Number of Hundreds. 3

Price of 300.	4764- 4 - 4 $\frac{4}{8}$
Price of 60.	952-16 -10 $\frac{4}{8}$
Price of 2.	31-15 - 2 $\frac{6}{8}$
Answer *L.*	5748-16 - 5 $\frac{6}{8}$

CASE VIII. Is to find the Price of a Quantity of Goods, that hath odd Weight or Measure annex'd.

Those kind of Questions you may prove either by the Rule of Three, or by working after a different Manner, as is here done by working Ex. 3, Page 72, and Ex. 4, Page 76.

Ex. 3. 936 ℔ 11 Oz. 12 dwts. 13 grs. at 23*l.* 16*s.*-4*d.* *per* ℔. for which set down

6)20(2
4)03(3
12)90(6
2|0)18|7(7
9
10*s.* $\frac{1}{2}$
5 $\frac{1}{2}$
1 $\frac{1}{5}$
4*d.* $\frac{1}{3}$

L. 936-19*s.*- 4*d.* $\frac{1}{2}$ $\frac{6}{1}$

23

2810-18 -	1	$\frac{1}{2}$	3			
18739- 7 -	6	$\frac{1}{4}$	2			
468- 9 -	8	$\frac{1}{4}$	0	$\frac{4}{2}$		
234- 4 -	10	-	3	1		
46-16 -	11	$\frac{1}{2}$	3	-	$\frac{5}{1}$	
15-12 -	3	$\frac{1}{4}$	3	-	-	$\frac{1}{3}$
22315- 2 -	6	$\frac{1}{4}$	2	-3	-1	$\frac{1}{3}$

A

A Table for odd Weight in Troy Weight may be as follows, *viz.* for an Ounce.

Reckon	1*s*.-8*d*.
For 1 dwt. the $\frac{1}{20}$ of that, *viz.*	1
For 6 grs. $\frac{1}{4}$ of that, *viz.*	0 $\frac{1}{4}$
For 1 gr. $\frac{1}{6}$ of that, *viz.*	- $\frac{0}{4}$ $\frac{1}{6}$

The Reaſon of this is becauſe in this Example and ſuch like the Price is firſt ſuppos'd to be one *L*, conſequently there will be as many *L*s. of Money to be ſet down as there are ℔s of Silver, *&c.*

Tons Cwts. Qrs. ℔

Ex. 4. Page 76. 379 - 17 - 3 - 23 at 11*l.* 12*s.*-7*d. per* Ton. For which ſet down

L. 379-17*s.*-11*d.* $\frac{1}{4}$ $\frac{2}{6}$

11

	4178-17 - 6	$\frac{0}{4}$	3	
10*s.* $\frac{1}{2}$	189-18 -11	$\frac{1}{2}$	6	$\frac{4}{2}$
2. $\frac{1}{5}$	37-19 - 9	$\frac{1}{2}$	1-1	$\frac{5}{1}$
6*d.* $\frac{1}{4}$	9- 9 -11	$\frac{1}{4}$	3-1-1	$\frac{4}{2}$
1 $\frac{1}{6}$	1-11 - 7	$\frac{3}{4}$	4-0-1-0	$\frac{2}{6}$
An. *L*	4417-17 -10	$\frac{1}{2}$	4-0-3-2	$\frac{2}{6}$

A Table for odd Weight may be as follows, the Conſtruction of which as alſo of all ſuch is by the Rule of Three and Practice, *viz.*

If 1 Ton coſts 1*l.* what will 1 Cwt. coſt?

Anſwer,	1*s*.
Then by Practice $\frac{1}{4}$ of Cwt. is $\frac{1}{4}$ of that	0 - 3*d.*
And 14 ℔ $\frac{1}{2}$ of that *viz.*	1 $\frac{1}{2}$
And 7 ℔ $\frac{1}{2}$ of that	- $\frac{3}{4}$
And 1 ℔ $\frac{1}{7}$ of that	$\frac{0}{4}$ $\frac{3}{7}$

By the Help of which you inſtantly compute Money for the odd Weight in your Queſtion.

When the Price of a Quantity of Goods is any of the Sums of Money in either of the following Tables.

Rule, Multiply the given Quantity by the Numerator or upper Number, and divide the Product by the Denominator or lower Number, the Quotient is the Answer, and of the same Denomination with the Integer that your Price is a Part of.

Tab. of Pts. of a *L.*

s.	*d.*
1-3	$\frac{1}{16}$
1-4	$\frac{1}{15}$
3-9	$\frac{3}{16}$
6-3	$\frac{5}{16}$
7-6	$\frac{3}{8}$
8-4	$\frac{5}{12}$
8-9	$\frac{7}{16}$
11-3	$\frac{9}{16}$
12-6	$\frac{5}{8}$
13-4	$\frac{2}{3}$
13-9	$\frac{11}{16}$
15-0	$\frac{3}{4}$
16-8	$\frac{1}{6}$
17-6	$\frac{7}{8}$
18-4	$\frac{11}{12}$

Tab. of Pts. of a *S.*

4 $\frac{1}{2}$	$\frac{3}{8}$
7 $\frac{1}{2}$	$\frac{5}{8}$
9	$\frac{3}{4}$
10	$\frac{5}{6}$
10 $\frac{1}{2}$	$\frac{7}{8}$

Ex. 1. What's the Price of 787 Yards, at 16*s*-8 *d. per* Yard?

5
6)3935
An. *L.* 655-16-8

Ex. 2. 5)942 Ells at 1*s*.-4*d*.
3)188-8
An. *L.* 62-16*s*.

Ex. 3. 859 Yards at 10*d*. $\frac{1}{2}$
7
8)6013
2|0)75|1-7*d*. $\frac{1}{2}$
An. *L.* 37-11-7 $\frac{1}{2}$

Another Ex. To what come the Duty of 11798 Yards, at $\frac{3}{5}$ of a Penny *per* Yard.

11798
3
5)35394
12)7078-$\frac{3}{4}$ $\frac{1}{5}$
2|0)5[illegible]-10
Answer *L.* 29-9-10 $\frac{3}{4}$ $\frac{1}{5}$

FINIS.

ERRATA. *Page* 13, in the Table next to 5*s*. $\frac{1}{4}$; put in 4*s*. $\frac{1}{5}$. *P.* 87, *for* Answer *L.* 128-11*s*.-3*d*. *r.* Answer *L.* 128-6*s*.-3*d*.